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GUIDE

TO THE

CIVIL SERVICE

EXAMINATIONS.

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GUIDE

TO THE

CIVIL SERVICE EXAMINATIONS;

WITH

Directions for Candidates,

EXAMINATION PAPERS, ABSTRACT OF COMMISSIONERS' REPORT, STANDARDS OF QUALIFICATION, AMOUNT OF SALARIES,

AND ALL NECESSARY

INFORMATION FOR THOSE SEEKING EMPLOYMENT

IN THE

GOVERNMENT CIVIL SERVICE.

P. S. KING,
PARLIAMENTARY PAPER DEPOT, 12, BRIDGE ST., WESTMINSTER;
SIMPKIN AND MARSHALL, PATERNOSTER ROW;
OLIVER AND BOYD, EDINBURGH; HODGES, SMITH AND CO., DUBLIN.

1856.

232. c. 120.

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BIBLIOTHECA BODLEIANA

PREFACE.

It is almost unnecessary to direct the attention of parents and teachers to the importance of the principle adopted by Government, of testing the qualification of the candidates for employment in public offices by a rigorous examination. Schoolmasters in particular will welcome a volume of this kind, as it will at once not only directly increase the value of their services and add to the importance of their position, but it will also raise the standard of their studies, and show the youths under their care that Government offices will no longer be a place of refuge for the idle and incompetent.

In this little volume, which contains a digest of the Report presented to Her Majesty by the Royal Commissioners, and copies of the papers set before candidates, not only are the requirements distinctly pointed out, but the deficiencies which have led to the rejection of many of the competitors are also plainly indicated.

Candidates for College and University honours are so well aware of the value of studying papers of this kind, that they form a most important item in university tuition, in many cases their private tutors confining their pupils almost entirely to the solution of the problems and questions contained in such papers. The Publisher hopes that the collection in this volume will be equally serviceable in directing and concentrating the studies of all candidates for employment in the Civil Service. In this hope he is supported by the fact, that to candidates

rejected in the Woolwich examinations for Engineer commissions, or for admission into the Practical Class, sets of the papers of questions have been forwarded direct from the Government office, that they might be better prepared, in case they should desire to compete a second time.

It will be clearly understood that the papers are different at every examination, and the old ones are only of use to show the general nature of the ordeal to be passed through. There is no doubt that the candidate who is thoroughly master of the questions contained in this volume, need not fear rejection at any future Civil Service examination.

It has not been judged necessary to enter into any lengthened details as to the mode of obtaining nominations to Government offices. When the offices are open to general competition, which, it is believed, will be universally the practice ere long, due notice is given in the public papers. In other cases the nominations are to be obtained through the influence of members of Parliament, gentlemen in public offices, and others having connections either with the secretaries or heads of departments. Theoretically, the patronage is vested in the Ministers and heads of departments, but practically it extends much lower and among a larger class of persons, both in the metropolis and in the provinces.

The range of age for each office has been given, and the minimum or commencing salary, so far as it could be discovered. During the probationary year, the salary may be somewhat lower than that set down; but when the appointment is confirmed, the holder immediately receives the full salary, which after the second year annually increases until the maximum of the class to which he belongs has been attained. Government clerkships, &c., are permanent, nothing but great irregularities or glaring incompetency causing a forfeiture of the office.

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INTRODUCTION.

On the 21st of May, 1855, Her Most Gracious Majesty issued an Order in Council, appointing Sir E. Ryan, J. S. Lefevre, Esq., C.B., and E. Romilly, Esq., Commissioners for conducting the examination of young men proposed to be appointed to any of the junior situations in the Civil Establishments; and authorising them to give certificates of qualification before such young men entered on their duties.

The Commissioners immediately put themselves in communication with the heads of departments, and with their assistance arranged the scheme of examinations which will be found in page xx. to xxxvi.

The first examination was held on the 30th of June, 1855, and since that period, examinations have taken place nearly every week. On the 4th March last, the Commissioners presented a report of the results, from which we learn that out of a total of 697 candidates examined, 309 were rejected. The nature of the examinations to which the young men were subjected will be gathered from the papers given below. It has not been thought advisable to print the passages selected for translation from Latin into English, as these were merely extracts from Virgil, and Horace, Cicero, Livy, and Tacitus. We have also omitted the French and German extracts, principally from historical and poetical works, as they would not be of any use in

directing the studies of future candidates. For similar reasons, we have not given the passages to be translated from English into the classical and modern languages. It has been judged expedient to print only two sets of the despatches of which the candidates were required to draw up a précis, or to which they were desired to write a final answer. What we have given will be sufficient to show the nature of this portion of the examination. Further examples may be found in almost any of the Blue Books, particularly in those containing correspondence on the Poor Laws, Railway Bills, Colonial Government, Finances, &c. For commercial correspondence, we would suggest that Anderson's *Mercantile Correspondence* might be studied with advantage.

The only text books to which the Commissioners have given the weight of their authority, are those proposed by the Foreign Office for the Diplomatic Service, the unpaid Attachés in which are required to know so much of Heeren's *Historical Manual of the Political System of Europe and the Colonies*, as treats of history from the year 1789; the fourth volume of Russell's *Modern Europe* (Latest Edition); and so much of McCulloch's *Geographical Dictionary* as relates to the country to which the candidate is about to proceed. The paid Attachés are required to have a competent knowledge of International Law, as laid down by Wheaton. For the Consular Service, the work recommended, is Smith's *Compendium of Mercantile Law*.

Mode of Examination.

The mode in which the examinations have been conducted in London has been the following:—The arithmetic paper has in most cases been given on the first morning, the time allowed being three hours and a half, and the afternoon has usually been occupied with three or four sums in compound addition, with dictation, and exercises in orthography. From candidates nominated to clerkships in almost all the branches of the Customs

department, and to various other situations, no further test of proficiency has been required. Others, whose examinations have included a greater variety of subjects, have occupied two days, and in some cases a third, and even a fourth.

In order to insure uniformity of standard, the provincial examinations are all under control of the Metropolitan Commission. The necessary papers are issued from the central offices, to which the candidate's answers, with specimens of handwriting, and certificates, are returned for inspection, the Commissioners deciding absolutely upon the documents then laid before them.

Subjects of Examination.

The subjects of examination naturally divide themselves into two classes :—

1 Those which are indispensable to the proper discharge of the duties of the office.

2 Those which testify that the candidate has received a liberal education.

To this may be added another class, namely :—

3 Subjects not in the "department" list, for which the candidates voluntarily offer themselves to be examined, and for which they receive certificates of competency.

I.

Indispensable.

All persons appointed to any junior situation in a Government office are required—

(*a*) To write a good hand.

(*b*) To be able to spell correctly.

(*c*) To be conversant with the elementary portions of arithmetic.

(*d*) To be able to write a simple letter grammatically.

(*a*) *Handwriting.*—This, say the Commissioners, should consist in "the clear formation of the letters of the alphabet. It should be rapid, neat, and of that even stroke which allows legible copies to be taken by pressing."

It would appear from the Report, that candidates have, hitherto, been very deficient in this art, particularly in that bold broad style so necessary in public documents. For incompetence in this branch alone, 44 persons were rejected.

(*b*) *Spelling.*—The ability of the candidates to spell correctly is tested by their writing to dictation a passage of average difficulty. They are then allowed to look over their work, to correct any faults they may have committed, and yet (excluding the errors that may have been "sheltered by bad writing") 41 candidates were rejected for deficiencies in this subject alone; 23 for deficiencies in both spelling and writing; 27 for deficiencies in both spelling and arithmetic; and 72 for deficiencies in spelling combined with other faults. The Commissioners observe that, "where two or more causes of rejection are specified, each (had it stood alone) would have been deemed sufficient to prevent the granting of certificates." The Commissioners are careful to state that, "the failures have not been errors in words of rare occurrence or technical character, but discreditable mistakes in those of every-day use." Where an additional test of orthography was desirable, the candidates were required to correct the erroneous spelling in a lithographed MS. altered for the purpose.

(*c*) *Arithmetic.*—The examination under this head includes two sets of papers—the elementary, given to tide-waiters and weighers, and to candidates for temporary employment; the higher, commencing with reduction and ending with decimals, given to candidates for permanent clerkships.

The portions of the latter paper vary, in some degree, with the requirements of the department, as will be seen by the table of "Standards of Qualification," given below. Candidates were generally required to answer *two* questions under each head. With regard to decimal arithmetic, the Commissioners state, "that the knowledge possessed by candidates has been, in the great majority of cases, defective. Many of the papers which have been set contain questions in division of decimals so framed as to present no difficulty whatever, except as to the position of the decimal point. Even these questions have been rarely attempted, and still more rarely attempted with success."

The number of candidates rejected for deficiencies in arithmetic was 89.

Few candidates have shown "an accurate or intimate knowledge of book-keeping." The number of rejections on account of failure in this subject alone was only 3, but in 24 other cases the deficiencies were sufficient to warrant the refusal of a certificate.

(*d*) *Correspondence and Précis.*—On the subject of correspondence, the Commissioners are silent; but they feel it their duty to make some remarks on précis-writing:—

"Of the importance and utility of such an accomplishment, we cannot entertain the slightest doubt; and we believe that there is hardly any mode in which a clerk can render more efficient service to his superior in office than by presenting before him a succinct, faithful, and intelligent abridgment of any document or correspondence upon which questions may arise; but we consider that it will not often occur that a candidate, unless he has previously been taught and exercised in this particular duty, will show any great proficiency therein; and we find considerable practical difficulty in effectively examining persons in this requirement, owing to the length of time which must necessarily be occupied by a candidate, first in making himself master of the documents which he is called upon to abstract, and afterwards in concisely abstracting them. We are not prepared, however, to recommend the departments who have adopted

this particular subject of examination to dispense with it; as we hope that, when it is publicly and generally notified, those persons who are likely to enter into the public service will take proper steps for procuring the necessary instruction. In the case of competitive examinations, we think that the making a précis may be usefully introduced as one of the subjects, and that as it tests several important intellectual qualities, it should be valued highly in the relative distribution of marks assigned on these occasions."

II.

Test Subjects.

On these subjects, the Commissioners remark:—

"There are some other prescribed subjects of examination which have not a direct relation to the future employment of the candidates, but are intended as tests of education and intellect. We consider these to be exceedingly useful in determining the positive merits of a nominated candidate, and as indispensable in ascertaining the relative merits of candidates in a competitive examination. Moreover, if the examinations were exclusively in subjects specially connected with the duties of the departments, they would injuriously affect the general education of those who might be destined to enter the public service. Their attention would be mainly or entirely directed to those subjects, to the neglect of those branches of general knowledge which experience has shown to be most fitted for invigorating the intellect and maturing the judgment."

The subjects which are considered tests that the candidate has received a liberal education, are—

(*a*) Geography and History.
(*b*) Latin and Modern Languages.

(*a*) *Geography and History.*—On these subjects an amount of knowledge, certainly not exceeding what would be gained at schools of the most moderate pretensions, has been received as sufficient.

"Questions have been set of very different degrees of difficulty, and a most erroneous idea would be formed as to the standard which has been fixed, were it supposed that any large proportion of a paper had in a single instance been required to be answered. The rejections have been limited to cases in which the subjects were wholly omitted, or in which gross and discreditable ignorance was shown, with no accurate knowledge whatever to justify a favourable decision."

For failure in geography combined with other subjects, 23 candidates have been rejected; and for history, &c. 19.

(b) Latin and Modern Languages.—Passages for translation from English into other languages, have in several papers been printed with those intended for translation into English, but the former accomplishment has not been treated as essential in any instance, except where specially prescribed by the department. Nor has it been deemed necessary that *all* the passages set for translation into English should be rendered by the candidate. The rejections under this head were 25, of which 10 were for deficiencies in language simply.

III.

Voluntary Examination.

"Every candidate who has been examined at the offices of the Commission in London has been permitted to select, if he thought proper, other subjects in addition to those required for the situation to which he was nominated. The rules laid down with regard to these have been,—1. That, in the case of those who passed in the prescribed subjects, and acquitted themselves creditably in the extra subjects, honorary additions specifying the subjects and characterising, in the terms which appeared appropriate, the degree of proficiency displayed, should be made to the certificate of qualification; and 2. That, in the case of those who either failed in the prescribed subjects, or did

not show any acquaintance deserving commendation with those selected by themselves, no notice should be taken of the voluntary portion of the examination."

The range of selection included French, German, Spanish, Italian, Latin, Greek, Book-keeping, History, Geography, and Elementary Mathematics. The following will show the form of certificate granted by the Commissioners:—

ADMIRALTY.

TEMPORARY CLERKS.

Prescribed Subjects.—1. Writing from dictation. 2. Arithmetic (including Vulgar and Decimal Fractions). 3. Book-keeping.

No. of Candidate.	Extra Subjects chosen by the Candidates for voluntary Examination.	Extent of Knowledge displayed.
1	French translation and composition.	Good and intelligent
	Spanish translation	Very fair
	Euclid, Books 1, 2, and 3	An accurate and creditable knowledge
	Algebra as far as Quadratic Equations	A fair knowledge
2	French translation	A fair knowledge
	German translation	Ditto.
3	French translation	A creditable knowledge
	Euclid	Ditto.

These voluntary examinations have clearly produced the best results, and the Commissioners cite one case in particular where the bearer of an honorary certificate was immediately promoted. They

"Do not wish, however, to be understood as holding the opinion that an intellectual examination, however carefully conducted, affords a complete and unerring test of the qualifications of candidates for

official employment. We admit that there are aptitudes for the transaction of business which cannot be discovered or measured by this process; but it is, nevertheless, certain that our examination furnishes the means of excluding the incompetent, and where competing examinations take place, or the candidate submits himself to voluntary examination in extra subjects, his intellectual qualities may, to a great extent, be accurately ascertained. In this manner, the departments are supplied with information as to the capacity and special acquirements of their clerks, and are better able to judge of the most advantageous mode of applying their services in the transaction of public business, and of the relative merits of parties, which have to be weighed in cases of promotion."

Competitive Examinations.

Most of the examinations have been what are familiarly known as "pass" examinations. In some instances, however, the "competition" principle has been introduced with the best success. The papers set at one of these examinations will be found below. It is pleasing to know that two competitors in the War Office examination being found equal, appointments were given to both of them. The competitive examination for supplementary clerkships in the department of the Council for Education was divided into two portions—"The first two days being devoted to subjects deemed of indispensable necessity, and two subsequent days to others selected as tests of intelligence and general education. Out of 31 candidates, 21 were excluded, as not having passed the preliminary examination; and to the 10 who were admitted to the final examination, appointments were given by the Lord President."

Without discussing the expediency of adopting the principle of open competition, as distinguished from examination, the Commissioners remark—

"That, both in the competitive examination for clerkships in our

own and in other offices, those who have succeeded in obtaining the appointments have appeared to us to possess considerably higher attainments than those who have come in upon simple nomination; and we may add, that we cannot doubt that, if it be adopted as a usual course to nominate several candidates to compete for each vacancy, the expectation of this ordeal will act most beneficially on the education and industry of those young persons who are looking forward to public employment."

After the candidate has passed his examination, and obtained his certificate, he is placed on probation for six or twelve months, at the end of which period, should he prove deficient in the necessary qualities of a clerk, the department is empowered to dispense with his services.

Certificates to be Produced by all Candidates for Public Employment.

I.—Age.

Candidates may be divided into two classes :—

1. Those born in England or Wales subsequently to the 30th day of June, 1837.

(*a*) Candidates included in this class should produce certificates from the Registrar-General of Births, Marriages, and Deaths, or his local officers.

(*b*) In ordinary cases, no further evidence will be required.

(*c*) Every candidate not producing such certificate must account satisfactorily for its non-production, and must prove his age by the evidence hereinafter mentioned.

2. Those born in England or Wales before the 1st day of July, 1837. Those who, though born in England or Wales on or subsequently to that day, are unable to produce the certificate above mentioned. Those not born in England or Wales.

(*a*) Candidates included in this latter class should produce, if possible, certificates of baptism, duly signed, and in the regular form.

(*b*) Where such certificates specify the time of birth, and no suspicion of irregularity exists, further evidence will not be required.

(*c*) Where a baptismal certificate is not produced, satisfactory reasons for its non-production must be assigned and verified.

(*d*) Where a baptismal certificate does not specify the time of birth, and where no baptismal certificate can be procured, the best evidence that can be given of the date of the candidate's birth must be obtained. For this purpose, in the case of Dissenters, the non-parochial registers, entered under the Act 3 & 4 Vict. cap. 92, and preserved in Somerset House, will be available. If such evidence be offered by a family Bible or record, an extract therefrom must be made and subscribed by some credible and disinterested person, with the following form of attestation :—

"This is a true extract from a Bible [or other book or "document, as the case may be] in the possession of " , residing at and the "insertion therein of the date of the birth of " appears to have been made at the time indicated.

"(Signed)
"(Place of abode)

"Dated this day of ."

(*e*) Where such extract has been duly verified, and no suspicion of irregularity exists, further evidence will not be required.

(*f*) Should there be no record whatever of the date of the birth of the candidate, the evidence of some credible and disinterested person, who can speak to his age, must be obtained. Such person must be required to make a solemn declaration in the statutory form before a magistrate, as to the date of the birth of the candidate, and as to the particular circumstances which enable the party declaring to speak to it.

II.—Health.

Every candidate must produce a certificate signed by a Member of the College of Physicians, a Member of the British College of Surgeons, or of the Apothecaries' Company, or a Medical Graduate of an University, dated subsequently to the nomination; and such certificate must contain the statements following:—

"I hereby certify, that I have this day personally examined Mr. " , proposed to be appointed to the junior situation "of in the department of , "and that I believe him to be free from any physical defect or "disease which would be likely to interfere with the proper dis- "charge of his duties.

"(Signed)

"(Address) ."

Special circumstances, with such explanations as may be necessary, should be introduced before the words "and I believe him to be free," &c., and the certificate should proceed "under [or notwithstanding] the circumstances herein appearing, I believe him to be free," &c.

The Civil Service Commissioners reserve to themselves the right to require a personal examination of the candidate by their own medical officer; and will, if they think fit, make a confidential application to the medical referee named by the candidate.

III.—Character.

The Civil Service Commissioners must reserve to themselves full discretion as to the evidence of character which they may in specific cases deem it expedient to require, but under ordinary circumstances they will limit themselves to the following requisition:—

1 Candidates who have been previously employed in any department of the public service should without delay communicate the fact of their having been so employed. The Civil Service Commissioners will then refer to the department named, and if the answer received should prove satisfactory, no further evidence will be required.

2 Candidates who have been previously in the employ of private individuals, should name their last employer as one of the referees mentioned below.

3 Candidates who have left school within two years before their nomination should name their last schoolmaster as one of the referees mentioned below.

4 Every candidate who has not been previously employed in the public service should produce papers in the annexed Form (marked A), satisfactorily filled up by two or more referees, of whom two at least must be householders. The counter-signature of a justice of the peace, clergyman of the Established or Roman Catholic Church, or of a recognised minister of some other religious denomination, must be obtained, where one of the referees is not himself a justice of the peace, clergyman, or minister. Such counter-signature should be appended to the Form marked B.

5 The heading of the schedule should be filled up by the candidate in his own handwriting.

In all cases where a certificate of qualification has been obtained by representations which afterwards turn out to have been untrue, the Civil Service Commissioners will deem it their duty to communicate the fact to the department to which the candidate has been admitted, and to take the best means in their power for fixing upon the referees the responsibility which they have incurred.

A.

Statement respecting proposed to be appointed to the junior situation of in the department of

1 Are you related to the candidate; if so, what is your relationship?
2 Are you well acquainted with the candidate?
3 From what circumstances does your knowledge of him arise?
4 How long have you known him?
5 Is he strictly honest and sober, intelligent and diligent?
6 Do you believe him to be free from pecuniary embarrassments?
7 What do you know of his education and acquirements?

8 Has he ever been in the service of the Government, and if so, in what situation?

9 So far as you can judge, is his character in all respects such as to qualify him for public employment, and in particular for the situation which he now seeks?

(Signature)
(Address)
(Date)

B.

I certify that the answers above written, and the signature thereto affixed, are in the proper hand-writing of
of , and that the said
is a person worthy of credit.

*To be signed by a justice of the peace or recognised minister of some religious denomination.

STANDARDS OF QUALIFICATION

ESTABLISHED BY THE VARIOUS DEPARTMENTS.

[Those in which "nothing is fixed" are omitted.]

ADMIRALTY.

(Age 17 to 25.)

I. WHITEHALL BRANCH.

1 Writing English from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 English Composition.
4 Précis.
5 Geography.
6 The leading points in English History.
7 Translation from French.
8 Translation from Latin or a second Modern Language.

II. SOMERSET HOUSE BRANCH.

1 Writing English from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Book-keeping by Double Entry.
4 English Composition.
5 Précis.
6 Geography.
7 Either—
  (*a*) Latin or a modern language;
  (*b*) The leading points of English or Modern History; or,
  (*c*) Algebra, Euclid, or any branch of Mathematics or Science.

III. CLERKS IN DOCKYARDS, VICTUALLING YARDS, OR NAVAL ESTABLISHMENTS AT HOME, AND TEMPORARY CLERKS.

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Book-keeping.

(Patronage vested in the Lords of the Admiralty, particularly in the First Lord. Lowest commencing salary, £90; with yearly increase.)

AUDIT OFFICE.

(Age 18 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions.
3 Correspondence.
4 Précis.

(Patronage vested in Treasury. Lowest salary, £90; promotion by merit.)

CHELSEA HOSPITAL.

1 Writing.
2 Copying from MSS.

(Patronage vested in Paymaster-General.)

CIVIL SERVICE COMMISSION.

(Age 18 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions, Interest and Annuities, Square Root, and the use of Logarithms).
3 Book-keeping.
4 English Composition.
5 Geography.
6 History of England.
7 Latin.
8 French.

COLONIAL OFFICE.

(Age 18 to 25.)

I. FOR CLERKSHIPS IN DOWNING STREET.

(Examination.—Preliminary only in case of competition.)

1 Exercises designed to test Hand-writing and Orthography.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Geography.
4 Translation from one of the following Languages, at the option of the Candidate—Greek, Latin, French, German, Spanish, Italian.
5 Précis or Abstract of Official Papers.

Candidates failing to satisfy the Civil Service Commissioners upon each of these subjects will not be permitted to proceed further with their examinations, and will not be entitled to certificates of qualification.

FINAL EXAMINATION (IN CASE OF COMPETITION).

Any number, not exceeding three, of the following subjects, at the option of the Candidate:—

1 Languages and Literature of Greece and Rome.
2 Languages and Literature of France, Germany and Italy.
3 Modern History, including that of the British Colonies; with Exercises in English Composition, designed to test purity and elegance of style.
4 Elements of Constitutional and International Law; with Elements of Political Economy.

5 Pure and mixed Mathematics, not including the highest branches; with Accounts and Book-keeping.

II. FOR WRITERSHIPS IN CEYLON.

EXAMINATION (PRELIMINARY ONLY IN CASE OF COMPETITION).

1 Exercises designed to test Hand-writing and Orthography.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Geography, particularly that of British India and its Dependencies.
4 Translation from one of the following Languages,—Greek, Latin, French, German, Spanish and Italian—the selection being left to the Candidate.
5 The preparation of a Précis or Abstract of Official Papers.

Candidates failing to satisfy the Civil Service Commissioners upon each of these subjects will not be permitted to proceed further with their examination, and will not be eligible for appointments.

FINAL EXAMINATION (IN CASE OF COMPETITION).

1 Languages and Literature of Greece and Rome.
2 Modern History, including that of the British Colonies and Possessions.—Exercises designed to test purity and elegance of style.
3 Elements of Constitutional and International Law.—Elements of Political Economy.
4 Pure and Mixed Mathematics, not including the highest branches.—Mercantile Finance.
5 Geology, Chemistry, and Civil Engineering.

Of the five classes of subjects thus defined, Candidates are at liberty to select any number, not exceeding three, in which they desire to be examined.

(Patronage vested in the Colonial Secretary; but most of the Appointments in the Colonies are left to the local authorities. Lowest salary, £80.)

COLONIAL LAND AND EMIGRATION OFFICE.

(Age 18 to 25.)

I. PERMANENT CLERKS.

1 Writing.
2 Arithmetic (a fair knowledge).
3 Précis.

II. TEMPORARY CLERKS.

(Age 17 to 45.)

1 Exercises designed to test Hand-writing and Orthography.
2 Elementary Arithmetic.
3 Exercises of a simple character in English Composition, designed to test ability to write an ordinary business letter.

(Patronage vested in Colonial Secretary. Lowest salary, £50.)

COMMITTEE OF COUNCIL FOR EDUCATION.

(Age 18 to 25.)

1 Writing from Dictation.
2 Arithmetic.
3 Book-keeping.
4 Précis.
5 Making fair copies from rough notes.
6 Calculation of per centages.

(Patronage vested in the Commissioners.)

CUSTOMS.

CLERKS IN THE SOLICITOR'S OFFICE, SEARCHERS, AND LANDING-WAITERS.

(Age 16 to 30.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 English Composition.

(Salary commencing, Clerks, £90 ; Searchers and Landing-waiters, £160.)

II. OTHER CLERKS, EXTRA CLERKS, COAST OFFICERS, GAUGERS.

(Age 21 to 30.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).

(Gauger's commencing salary, £125.)

III. TIDEWAITERS AND WEIGHERS.

1 Writing.
2 Orthography.
3 Arithmetic (first four Rules, and the different Weights and Measures).

(Commencing salaries, from £75 to £100.)

DESIGNS (REGISTRY OF).

The same as for "Supplementary Clerks" in the Board of Trade.

(Patronage vested in President of Board of Trade. Commencing salary, £120.)

EXCHEQUER.

(Age 17 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions and Practice).
3 Précis.
4 Book-keeping.
5 Correspondence.

(Patronage vested in Chancellor of Exchequer. Lowest Salary £80.)

FACTORY INSPECTORS' DEPARTMENT.

SUB-INSPECTORS OF FACTORIES.

(Age 25 to 40.)

1 Exercises designed to test Hand-writing and Orthography.
2 Arithmetic (to Vulgar and Decimal Fractions).

3 Latin or one modern Foreign Language.
4 English History.
5 Geography.
6 Précis.
7 Elements of Political Economy.
8 English Composition.

(Patronage vested in President of Board of Trade.)

FOREIGN OFFICE.

I. SECRETARY OF STATE'S OFFICE.

(Not under 20, unless Candidate's family lives in town.)

1 Writing from Dictation.
2 Précis.
3 French.

II. UNPAID ATTACHES.

(Age 18 to 25.)

1 Writing from Dictation.
2 Précis.
3 Geography.
4 Modern History.
5 French (Writing from Dictation, Speaking, and Translation).
6 Translation from either German, Latin, Spanish, or Italian, at the option of the Candidate.

III. PAID ATTACHES.

1 A speaking and a writing knowledge of the Languages of the countries in which they have resided since their first appointment to the Service.
2 International Law.
3 Reports upon the constitution and condition of the countries in which they have resided.

IV. CONSULAR SERVICE.

(Age 25 to 50.)

1 Arithmetic.
2 English Composition.

3 French (written and spoken).
4 The Language of the port at which they may be appointed to reside.
5 British Mercantile and Commercial Law.

(Patronage vested in the Foreign Secretary. Salaries—Paid Attachés, from £250 to £400. Clerks, lowest, £80.

GENERAL REGISTER OFFICE.

(Age 17 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 English Composition.
4 Correspondence.
5 Précis.
6 Geography.
7 English History.

(Patronage vested in Treasury. Lowest Salary, £80.)

INDIA BOARD.

(Age 18 to 25.)

1 Writing.
2 Orthography.
3 Arithmetic.
4 English Composition.
5 Précis.
6 Geography.

(Patronage vested in President of Board of Control. Salaries commence at £96. Extra Clerks at £80; with annual increase to maximum.)

INLAND REVENUE.

I. OFFICES OF RECEIPT AND ACCOUNT; AND SURVEYORS OF TAXES.

(Age 18 to 25.)

1 Reading.
2 Writing from Dictation.

3 Arithmetic (including Vulgar and Decimal Fractions).
4 Book-keeping by Double Entry.
5 Correspondence.
6 Geography.
7 History of the British Empire.

(Commencing Salary, £100.)

II. OFFICES NOT OF RECEIPT AND ACCOUNT.

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Correspondence.
4 Geography.
5 History.
6 Latin [in the Solicitor's office only].

(Commencing Salary, £85).

III. LIEUTENANTS OF REVENUE POLICE.

(Age 20 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).

IV. EXPECTANTS OF EXCISE.

(Age 19.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Book-keeping by Double Entry.

(Patronage divided between the Treasury and the Commissioners. Salaries commence at £1 a week.)

JOINT-STOCK COMPANIES REGISTRY.

(The same as for "Supplementary Clerks" in the Board of Trade.)

JUDGE-ADVOCATE-GENERAL'S OFFICE.

1 Writing from Dictation.
2 Accuracy in copying.

(Salaries commence at £80.)

METROPOLITAN POLICE COURTS.

(Age 19 to 25.)

1 Reading.
2 Writing from Dictation.
3 Arithmetic (including Vulgar Fractions).
4 English Composition.
5 Modern Geography.
6 English History.
7 Criminal Law (if the Candidate be a Certificated Attorney, or Justices' Clerk at Petty Sessions).

(Patronage with Commissioners.)

METROPOLITAN POLICE OFFICE.

(Age 17.)

1 Writing from Dictation
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Book-keeping.
4 English Composition.
5 English Geography.
6 History of the British Empire.
7 French.

NATIONAL DEBT OFFICE.

(Age 16 to 25.)

1 Handwriting.
2 Correct copying from MSS.
3 Arithmetic (including Vulgar Fractions).
4 Geography.
5 History.

(Patrons, Chancellor of Exchequer and Lords of Treasury.)

PAYMASTER-GENERAL'S OFFICE.

(Age 16 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions, purchase of Stock and Exchange).

3 Book-keeping.
4 Précis.

(Patronage vested in Paymaster-General. Lowest salary, £80; increasing £10 annually.)

POOR LAW BOARD.

I. SUPERIOR CLERKS.

(Age 18 to 25.)

1 Arithmetic (to Vulgar and Decimal Fractions.)
2 English Composition.

(Lowest salary, £100.)

II. SUPPLEMENTARY CLERKS.

1 Handwriting.
2 Accuracy in copying.
3 Arithmetic (elementary).
4 English Composition (ordinary principles).

(Patronage in Parliamentary Secretary. Lowest salary, £80.)

POST OFFICE.

I. SECRETARY'S OFFICE.

(Age 17 to 24.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar Fractions).
3 English Composition.
4 Précis.
5 French or German.

(Lowest salary, £90.)

II. OTHER OFFICES.

1 Writing from Dictation.
2 Arithmetic (including Reduction, Rule of Three and Practice).

(Lowest salary, £60. Patronage divided between Postmaster-General and Receiver-General.)

PRISONS DEPARTMENT.

(Age 18 to 40.)

1 Writing from Dictation.
2 Arithmetic (including the Rule of Three and Practice), with an accurate knowledge of the Arithmetical Tables.

PRIVY COUNCIL OFFICE.

INFERIOR CLERKS.

1 Writing.
2 Arithmetic.
3 English Composition.
4 French (such a knowledge as would enable the Clerks to copy and examine Documents in that language with accuracy).

STATIONERY OFFICE.

(Ordinary Clerks, 17 to 25; other clerks, 19 to 40.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar Fractions).
3 English Composition.

SEAMEN'S REGISTRY OFFICE.

(The same as for "Supplementary Clerks" in the Board of Trade.)

TRADE, BOARD OF.

I. ORDINARY CLERKS.

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Précis.
4 Geography.
5 Translation from one Ancient or Modern Foreign Language.

II. SUPPLEMENTARY CLERKS.

1 Writing from Dictation.
2 Transcribing correctly and expeditiously.
3 Arithmetic (the first four rules, with Practice and the Rule of Three).
4 Grammatical structure of sentences of a simple character.

(Patronage vested in the President. Lowest salary, £80.)

TREASURY.

I. ESTABLISHMENT CLERKS.

(Age 18 to 25.)

1 Exercises designed to test Hand-writing and Orthography. Good hand-writing to consist in the clear formation of the letters of the alphabet.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 First Three Books of Euclid.
4 History of England.
5 Geography.
6 Translation from one of the following Languages,—Latin, French, German or Italian,—the selection being left to the Candidate.
7 The preparation of a Précis or Abstract of Official Papers.

II. SUPPLEMENTARY CLERKS (COMPETITIVE).

(Age 18 to 35.)

1 Writing from Dictation.
2 English Composition.
3 Arithmetic (including Vulgar and Decimal Fractions).
4 Book-keeping.

(Patronage divided between First Lord, Chancellor of the Exchequer, and Secretaries. *Salary (during year of probation), £90; afterwards, £100, annually increasing.

WAR DEPARTMENT.

(Age 18 to 25.)

I. PERMANENT CLERKS.

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 English Composition.
4 Précis.
5 Geography.
6 History (general outlines).
7 Latin or one Foreign Language.

II. PERMANENT CLERKS AT OUT-STATIONS.

1 Writing from Dictation.
2 Arithmetic (to Vulgar and Decimal Fractions).
3 Correspondence.
4 Geography (outlines).
5 History.

III. TEMPORARY CLERKS.

(Age 18 to 40.)

1 Writing from Dictation.
2 Arithmetic (elementary).
3 Correspondence.

(Patronage in War Minister. Lowest salary, £90.)

QUARTERMASTER-GENERAL'S OFFICE.

(Age 16 to 25.)

1 Writing from Dictation.
2 Arithmetic (first four rules).

(Patron, the Quartermaster-General. Lowest salary, £90.)

WOODS, OFFICE OF.

(Age 17 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Book-keeping (general principles).
4 English Composition.

5 Précis.
6 Geography.
7 English History (leading points).
8 French (some knowledge).
9 Latin (translation).

(Patrons, the Commissioners and Treasury.)

WORKS, OFFICE OF.

1 Writing from Dictation.
2 Arithmetic (including Interest and Practice).
3 Correspondence.

(Patrons, the Treasury and Commissioners.)

DEPARTMENTS IN SCOTLAND.

BOARD OF FISHERIES.

(Clerks, 17 to 25; Fishery Officers, 21 to 30.)

1 Writing from Dictation.
2 Arithmetic (first four rules and Rule of Three.)
3 Correspondence.
4 Book-keeping by Single Entry.

BOARD OF SUPERVISION.

1 English Composition.
2 Arithmetic.

QUEEN'S AND LORD TREASURER'S REMEMBRANCER'S OFFICE.

(Age 18 to 28.)

1 Exercises designed to test Hand-writing and Orthography.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 English History.
4 Geography.
5 Latin, or one modern Foreign Language.
6 English Composition.

DEPARTMENTS IN IRELAND.

CHIEF SECRETARY'S OFFICE.

(Age 18 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 English Composition.
4 Correspondence.
5 Précis.
6 Geography.
7 History.

CONSTABULARY OFFICE.

1 Writing from Dictation.
2 Arithmetic.
3 English Composition.
4 Geography of Ireland.

DIRECTORS OF PRISONS (OFFICE OF).

(Age 18 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Correspondence.
4 Précis.

DUBLIN METROPOLITAN POLICE.

(Age under 25.)

1 Reading.
2 Writing from Dictation.
3 Arithmetic.
4 Geography of the British Isles.

INSPECTORS OF LUNATIC ASYLUMS (OFFICE OF).

(Age 18 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions).
3 Correspondence.
4 Précis.

INSPECTORS OF PRISONS (OFFICE OF).

(Age 18 to 25.)

1 Writing from Dictation.
2 Arithmetic (including Vulgar and Decimal Fractions)
3 Correspondence.
4 Précis.

PAYMASTER OF CIVIL SERVICES (OFFICE OF).

I. CLERKS IN PAY OFFICE.

(Age 16 to 22.)

1 Writing from Dictation.
2 Arithmetic.
3 Book-keeping.

II. CLERKS IN RECORD OFFICE.

1 Writing from Dictation.
2 Arithmetic.
3 Book-keeping.
4 Surveying.
5 Irish and English History.
6 Latin.
7 French.

POOR LAW COMMISSION.

EXTRA CLERKS.

(Age 18 to 30.)

1 Writing from Dictation.
2 Copying.
3 Arithmetic (including Vulgar Fractions and Decimals).
4 English Composition.
5 Correspondence.
6 Précis.
7 Geography of the British Islands.

REGISTRY OF DEEDS OFFICE.

(Age 17 to 25.)

1 Writing from Dictation.
2 Arithmetic (elementary).
3 English Composition.

EXAMINATION PAPERS FOR THE CIVIL SERVICE.

PART I.

PROVINCIAL.

Papers set by Officers of Customs, Excise, and Post Office, for local Examinations.

CUSTOMS AND EXCISE.

EXTRA CLERK.

Single Proportion Direct.

1 A wedge of gold weighing 14 lb. 3 oz. 8 dwts. cost 514*l.* 4*s.*, required the rate per ounce.

2 Required, the cost of 17 hogsheads of tobacco, each weighing 11 cwt. 2 qrs. 19 lbs., at 19*l.* 8*s.* per cwt.?

Single Proportion Inverse.

3 If a pasture can maintain 7 horses 6 weeks, how long can it maintain 35 horses?

4 If 100*l.* gain 10*l.* in 12 months, how much will gain the same in 9 months?

Double Proportion.

5 If 100*l.* in 12 months gain 7*l.* interest, what is the interest of 571*l.* for 6 years?

6 If 939 men consume 351 quarters of wheat in 168 days, how many will consume 1404 quarters in 56 days?

Profit and Loss.

7 By selling cloth at the rate of 12*s.* per yard, 15*l.* per cent. was gained, what per cent. would be gained when it was sold at the rate of 10*s.* 6*d.* per yard?

8 Silk sold at 12*s.* 6*d.* per yard gained 7*l.* 10*s.* per cent., what did it cost per yard?

Vulgar Fractions.

Add the following:

9 $\frac{3}{4}$, $\frac{4}{7}$, and $\frac{5}{8}$.

10 $\frac{3}{4}$ths of a pound to $\frac{5}{8}$ths of a shilling.

Deduct the following:

11 From $\frac{5}{8}$ths take $\frac{1}{3}$ths of $\frac{5}{8}$ths.

12 From $\frac{1}{8}$th of a yard take $\frac{2}{3}$rds of an inch.

Multiply the following:

13 $\frac{1}{4}$ of $\frac{3}{8}$ by $\frac{4}{7}$ths.

14 $\frac{3}{4}$ of 9 by $\frac{1}{8}$ths.

Divide the following:

15 $\frac{14}{27}$ by $\frac{2}{3}$.

16 $\frac{9}{16}$ by $4\frac{1}{2}$.

Decimal Fractions.

Add the following, and bring them to their proper values:

17	£	18	Tons.
	4785·321		576·098
	547·9		88·47
	643·198		694·321
	599·97		745·879
	654·099		33·4
	9·9		7·9
	584·498		654·54
	337·87		89·785
	4679·3		547·678
	944·32		99·785

Multiply the following and bring them to their proper values:

19 54·32*l.* by 4·7.

20 5987 cwts. by ·99.

Divide the following and bring them to their proper values:

21 880·7643*l.* by 5·48.

22 476·532 tons by 60.

TIDEWAITER.

1 Add 367443; 52421; 1671; 2596; 924; 34853; 684; 24835; 87; and 72 together.

2 Add 491*l.* 16*s.* 9*d.*, 272*l.* 15*s.* 6¼*d.*, 889*l.* 17*s.* 10½*d.*, 647*l.* 19*s.* 2¾*d.*, 398*l.* 16*s.* 7*d.*, 563*l.* 16*s.* 10¼*d.*, 770*l.* 0*s.* 5¾*d.*, 945*l.* 17*s.* 7*d.*, 240*l.* 13*s.* 9½*d.*, and 150*l.* 10*s.* together.

3 Subtract 868704368 from 7648200069.

4 Subtract 169 lbs. 6 oz. 14 dwts. 17 grs. from 187 lbs. 9 oz. 12 dwts. 20 grs.

5 Multiply four millions, forty-nine thousand and three, by thirty-six thousand and twenty-nine.

6 Multiply 49 tons 13 cwt. 2 qrs. 26 lbs. 10 oz. 7 dwts. by 9.

7 Divide 5946784379 by 492.

8 Divide 467 tons 3hhd. 26 galls. 2 qrts. 1 pint by 5.

9 In 34 lbs. 10 oz. 12 dwts. 16 qrs. troy, how many grains?

10 In 2,160,000 cubic inches, how many loads of hewn timber?

11 Reduce 159 quarters of corn to quarts.

12 In 4005 deals how many great hundreds?

13 In 150,000 eggs how many gross?

14 In 50 acres how many square inches?

15 In 3 leagues how many inches?

16 Reduce 564 English ells to nails.

TIDEWAITER AND BOATMAN.

Addition.

£	*s.*	*d.*	*tons.*	*cwt.*	*qrs.*	*lbs.*
912	17	8	84	16	3	18
5	10	9¾	1	19	2	14
79	13	10¼	56	13	3	22
365	9	5½	19	18	2	16

Wine.

yds.	*ft.*	*in.*	*hhds.*	*glns.*	*qts.*	*pts.*
19	10	7	52	38	3	2
3	7	9¾	19	58	3	1
12	8	10½	7	29	3	2
7	11	8¼	85	48	2	1

Subtraction.

£	*s.*	*d.*	*tons.*	*cwts.*	*qrs.*	*lbs.*	*yds.*	*ft.*	*in.*
975	19	1½	359	17	2	19	252	1	1
9	16	10¾	156	18	3	27	198	2	11

Multiplication.

Multiply 978015632 by 9738.

Division.

Divide 95708654 by 298.

POST-OFFICE.

(PROVINCIAL).

Addition.

miles	*fur*	*per.*	*yds.*	£	*s.*	*d.*	*miles*	*fur.*	*pls.*
37	3	14	2	458	10	11¼	12	2	39
28	14	16	2	1087	2	3½	15	1	19
19	10	9	4	942	16	7½	17	1	10
10	5	6	3	1234	5	6	19	2	15
20	2	2	2	114	13	8	14	2	16
30	1	1	4	29	19	11¾	122	1	2
48	4	10	3	3867	8	11¾	199	11	21

hours	*min.*	*secs.*	*years*	*mths.*	*wks.*	*dys.*
20	37	40	76	8	3	6
17	20	35	57	11	2	3
21	16	34	34	9	3	5
16	27	46	57	6	1	2
22	19	52	35	10	2	4
19	22	16	56	9	3	3
21	31	37	20	6	1	2
138	56	20	340	3	3	4

Subtraction.

	£	*s.*	*d.*	*miles*	*fur.*	*pols.*	*yds.*	*ft.*	*in.*
From	453	6	$2\frac{1}{2}$	70	7	13	1	1	2
Take	165	1	$10\frac{3}{4}$	20	0	14	2	2	8
	£288	4	$3\frac{3}{4}$	50	6	38	0	1	6

Multiplication.

Answers.

120 dozen of candles at 9*s.* $9\frac{1}{2}$*d.* per dozen - £46 15*s.* 0*d.*
144 reams of paper at 13*s.* 4*d.* per ream - 96 0 0
Multiply 24*m.* 3*f.* 20*p.* 2*y.* by 6. Multiply £1 9*s.* 4*d.* by 28.

Division.

Divide 821*l.* 17*s.* $9\frac{3}{4}$*d.* by 4. *Answer* £
„ 227*l.* 10*s.* 5*d.* by 11. „ £
„ 85*l.* 6*s.* 0*d.* by 72. „ £

Reduction.

In 6169 pence how many pounds?
In 35 guineas how many farthings?
How many fourpenny-pieces in 37,689 shillings?
In 2,470*l.* how many crowns?
How many half-sovereigns in 7,642 guineas?

Practice.

846 at $\frac{3}{4}d.$	*Answer* £
352 at $1\frac{1}{2}d.$	„ £
876 at $8\frac{1}{2}d.$	„ £
969 at 19*s.* $11\frac{1}{2}d.$	„ £
137 at 1*l.* 17*s.* 6*d.*	„ £

Rule of Three.

What is the value of $19\frac{1}{2}$ chaldrons of coals at 1*l.* 11*s.* 6*d.* per chaldron? £

At $10\frac{1}{2}d.$ per pound, what is the value of a firkin of butter containing 56lbs.? £

A bankrupt owes 4,968*l.*; he has only money sufficient to pay 9*s.* 7*d.* in the pound; how much money has he to pay his debts? £

If 100 men can finish a work in 12 days, how many men are sufficient to do the same in 3 days?

What is the half year's rent of 547 acres of land at 15*s.* 6*d.* an acre?

Write down in figures—

1 Two millions five thousand and eighty-seven.

2 Four hundred and sixty-one thousand and one.

3 Twenty-seven millions seven hundred and six.

Addition.

4

£	*s.*	*d.*
366	13	$4\frac{1}{4}$
78	19	$2\frac{3}{4}$
942	16	$8\frac{3}{4}$
1268	17	$6\frac{1}{2}$
2876	15	2
5534	2	0

5

Mil.	*furs.*	*pers.*	*yds.*
67	3	14	2
19	6	4	1
3	1	6	2
17	4	1	0
20	3	6	2
128	1	32	$1\frac{1}{2}$

Subtraction.

6

£	*s.*	*d.*
1687	1	$7\frac{3}{4}$
964	13	$10\frac{1}{2}$

7

Mils.	*furs.*	*pers.*	*yds.*	*ft.*	*ins.*
79	6	12	1	1	6
68	7	13	2	2	7

Multiplication.

8 Multiply 1*l.* 17*s.* 6*d.* by 47.
9 20*l.* 3*s.* 0¾*d.* by 18.
10 13*l.* 0*s.* 11½*d.* by 368.

Division.

11 Divide 136*l.* 17*s.* 8*d.* by 26.
12 18*l.* 9*s.* 0¾*d.* by 78.

Reduction.

13 Reduce 42 cwts. 3 qrs. 17 lbs. 6 ozs.
14 18 tons 17 cwts. 2 qrs. 1lb.
15 15 miles 2 fur. 36 per. 2 yds.
16 15 guineas to farthings.

Proportion.

17 How much land at 16*s.* an acre shall be given in exchange for 480 acres at 15*s.* an acre?
18 A person fails for 1,078*l.*, and his effects are worth 370*l.* 18*s.* 5½*d.*: what will be the dividend on 78*l.* 10*s.*?
19 If 600*l.* gain 45*l.* in 18 months, how much will 100*l.* gain in a year?
20 If 70*l.* 16*s.* 4*d.* is the cost of 16 cwt. 4 lbs., what would 1 ton 2 cwt. 3 qrs. cost?

Practice.

21 The value of 1,245 at 4*d.*
22 653 at ¾*d.*
23 328 at 8*s.* 5½*d.*
24 1,530½ at 15*s.* 9*d.*
25 674 at 4*l.* 8*s.* 4*d.*
26 638 at 2*l.* 17*s.* 4*d.*
27 983 at 3*s.* 10½*d.*
28 3 cwts. 2 qrs. 17 lbs. at 1*l.* 5*s.* 8*d.* per quarter.

EXPECTANTS OF EXCISE.

Add together ·0007, 1·0109, ·01 & 9.
Add together 14·3712, ·001, 5·0001 & 100.

From 10154271· take 9178965·8742.
From 991742865·010101 take 881745522·201002.
Multiply 91000·41 by 7101.
Multiply 7310·8001 by ·0089.
Divide 218051·081884 by 2·00099.
Divide 81642· by 276·804.
Add $\frac{3}{4}$ and $\frac{6}{7}$ together.
Add $\frac{3}{4}$, $\frac{4}{7}$ and $\frac{5}{8}$ together.
Subtract $4\frac{1}{3}$ from $\frac{68}{15}$.
Subtract $\frac{7}{8}$ from $\frac{9}{10}$.
Multiply $\frac{3}{4}$ by $\frac{7}{9}$.
Multiply $\frac{2}{7}$ by $\frac{17}{45}$.
Divide $\frac{41}{33}$ by $\frac{63}{11}$.
Divide $\frac{9}{16}$ by $4\frac{1}{2}$.
Divide $\frac{3}{4}$ by $\frac{8}{10}$.
Divide $\frac{8}{20}$ by $\frac{4}{5}$.

PART II.

Miscellaneous Papers used at various Examinations.

ARITHMETIC.

A.

ELEMENTARY.

1 Add

5	4	7	2	1
6	0	3	9	9
2	7	5	4	6
8	1	3	2	9
7	6	4	0	1
8	9	2	0	7

2 From 2 0 1 5 4 3 7 5 0 9 1 1
take 1 9 2 3 8 5 4 9 2 5

3 Multiply 53786417276 by 5846.
4 Divide 793847615 by 5.
5 Divide 632798014 by 7243.

6 The Norman Conquest took place in the year 1066 and Queen Victoria was crowned in 1838, how many years intervened between the two events?

7 How many days intervened between 6th April, 1836, and 6th April, 1854?

		£	s.	d.
8	Add	5 6 8 0	11	$9\frac{3}{4}$
		2 7 9 4	17	8
		5 4 7 7	8	$10\frac{1}{2}$
		4 8 5 6	4	$9\frac{3}{4}$
		7 7 6 5	19	$7\frac{1}{2}$
		6 4 6 1	8	$2\frac{1}{4}$

		£	s.	d.
9	From	1 6 7 5 4 0	9	$2\frac{1}{4}$
	take	8 5 9 8 1	16	$7\frac{1}{2}$

10 Multiply 36,758*l.* 17*s.* $5\frac{1}{4}$*d.* by 7.
11 Multiply 1,563*l.* 17*s.* $9\frac{3}{4}$*d.* by 357.
12 Divide 20,954*l.* 17*s.* $6\frac{1}{2}$*d.* by 9.
13 Divide 13,854*l.* 11*s.* 5*d.* by 158.

B.

ELEMENTARY.

1	Add together	7 5 4 3 2 8
		6 0 8 7 6 6
		5 9 9 7 3 5
		4 7 6 8 1 9
		2 6 5 4 8 6
		4 8 9 2 6 8

2	From	2 0 3 6 9 7 5 2 3 1
	take	8 7 6 2 5 7 9 8

3 Multiply 567039884276 by 8.
4 Multiply 403692158 by 396.
5 Divide 5802476484 by 6.
6 Divide 294683125 by 865.

	£	s.	d.
7 Add	3 4 1	16	$8\frac{1}{3}$
	7 6 8	11	$0\frac{1}{4}$
	2 7 9	8	9
	7 9 3	17	$5\frac{3}{4}$
	4 7 6	4	$10\frac{1}{3}$
	5 4 2	11	$7\frac{1}{4}$

	£	s.	d.
8 From	4 1 0 3 2	7	$2\frac{1}{4}$
take	3 7 8 4 9	15	$7\frac{1}{2}$

9 Multiply 25,841*l.* 16*s.* $5\frac{1}{4}$*d.* by 7.
10 Multiply 1,854*l.* 7*s.* $7\frac{1}{2}$*d.* by 465.
11 Divide 85,432*l.* 19*s.* $11\frac{1}{2}$*d.* by 7.
12 Divide 27,543*l.* 12*s.* 4*d.* by 352.
13 A person having 5,704*l.* 18*s.* $4\frac{1}{2}$*d.*, lays out one third in goods, which he sells for 2,316*l.* 5*s.* 10*d.*, how much has he at last, and how much has he gained?
14 At what o'clock does the sun set when it rises at 4h. 16m. 8s.?

C.

ELEMENTARY.

1 Add together—

3	7	2	9	8	4	1	3	7
	2	7	6	5	9	4	3	0
1	5	0	9	3	2	1	6	9
		4	5	9	1	0	0	3
	2	1	0	8	2	8	8	8
1	7	6	9	3	4	2	1	9

2 Add—

£	s.	d.
3209	10	$11\frac{1}{4}$
77	13	5
193	1	7
16	8	9
4218	0	$10\frac{3}{4}$
107	6	$9\frac{1}{2}$
3999	1	$1\frac{1}{4}$

3 From 5034910016 2
take 2165700039 8

	£	s.	d.
4 From	19813	7	$7\frac{1}{2}$
take	2009	6	$10\frac{3}{4}$

5 Multiply 85001997 by 5.
6 Multiply 73299863 by 497.
7 Multiply 35,087 17*s.* 17½*d.* by 7.
8 Multiply 9,003 19*s.* 1½*d.* by 39.
9 Multiply 3,001 6*s.* 4½*d.* by 351.
10 Divide 2975069895 by 35.
11 Divide 628010082621 by 709.
12 Divide 89,075*l.* 13*s.* 6*d.* by 9.
13 Divide 713,202*l.* 13*s.* 4*d.* by 576.
14 Write down in figures:—
(1) Nine million ten thousand and nineteen.
(2) Five thousand and six million eight thousand and ninety-four.
15 How many yards of paper (one yard wide) are required to paper a room 15 feet long, 12 feet wide, and 10 feet high?
16 How many days were there between the 3rd June 1850, and the 3rd March 1855, both inclusive?
17 If the telegraph posts are known to be 66 yards apart and one is observed to pass the window every three seconds, how many miles an hour is the train travelling?

D.

Reduction.

1 Reduce 375 cwts., 2 qrs., 1 st., 13 lbs., to ounces.
2 Reduce 36 miles, 3 furlongs, 36 poles, 5 yards, to feet.
3 How often will a wheel 3¼ yards in circumference turn between London and York, the distance being 198 miles?
4 How many pounds of silver are there in 270 spoons, each of which weighs 1 oz., 13 dwts., 8 grs.?
5 How many seconds are there in 35 d., 8 h., 48 m., 29 sec.?
6 How many square yards, feet, and inches are there in the top of a table, the sides of which are 21 ft. 7½ in. and 19 ft. 5 in.?
7 How many solid yards, feet, and inches are there in 175,983 solid inches?

Proportion.

8 If 59*l.* 10*s.* will buy 25 cwts. 2 qrs. of sugar, what quantity will 6*l.* 14*s.* 2*d.* buy?
9 If the penny loaf weighs 5 ounces when wheat is at 62 shillings the quarter, what ought it to weigh when wheat is 64*s.* the quarter?
10 If by paying down 70*l.* 17*s.* 6*d.* a person becomes entitled to 2*l.* 9*s.* 7*d.* a year, what income should he gain by paying 2,151*l.* 17*s.* 8*d.* in the same way?
11 If a tax on an income of 1,132*l.* amount to 125*l.* 1*s.* 5⅞*d.*, what is that in the pound?
12 If the carriage of 107 cwt. 10 lbs. cost 37*l.* 9*s.* 7½*d.*, what would the carriage of a ton cost?
13 If 24 men working 8 hours a day can build a house in 70 days, in how many days might it be built by 42 men working 10 hours a day?

Practice.

14 Find the value of 373 at 2*l.* 16*s.* 10¼*d.*
15 What is the rent of 67 acres of land for 2 years, 9 months, 11 days, the yearly rent of an acre being 2*l.* 5*s.*?
16 Find the value of 9 tons, 4 cwt., 3 qrs., 21 lbs., at 14*l.* 15*s.* 9*d.* per ton.
17 Find the price of 217¼ yds. of lace at 2*l.* 17*s.* 7½*d.* per yd.

18 What is the price of 329 yds., 3 qrs., 2nls., at 5*s.* 2½*d.* per quarter?

19 What is the dividend on 2,734*l.* 16*s.* 8*d.* at 9*s.* 4½*d.* in the pound?

Interest.

20 Find the interest on 1,257*l.* 15*s.* for 5¾ years at 4 per cent. per annum.

21 Find the interest on 194*l.* at 5 per cent. per annum from the 3rd of March to the 18th of December following.

22 At what rate per cent., simple interest, will 951*l.* 7*s.* 6*d.* amount to 1,141*l.* 13*s.* in five years.

23 Find the discount on 594*l.* 14*s.* 9*d.*, due 8 months hence, at 5¾ per cent. simple interest.

24 When the Three per Cents. are at 85*l.* 17*s.* 6*d.*, what is the rate of interest?

25 Find the amount of 225*l.* for 3 years at 4 *l.* per cent. compound interest.

Vulgar Fractions.

26 Add together $\frac{3}{5}$, $\frac{3}{7}$, $\frac{4}{11}$, and $\frac{5}{13}$ of $7\frac{4}{5}$, and subtract the result from $3\frac{3}{35}$.

27 Multiply $\frac{4}{5}$ of $\frac{7}{11}$ of 15 by $\frac{14}{15}$ of $12\frac{2}{7}$.

28 What number multiplied by $\frac{3}{5}$ will give $15\frac{1}{3}$ as the product?

29 If $\frac{4}{7}$ of a quarter of wheat cost 54*s.*, what will be the price of $\frac{1}{3}$ of a bushel?

30 What fraction of half-a-crown is $\frac{2}{3}$ths of 6*s.* 8*d.*?

31 Add together $3\frac{5}{8}$ pounds, $9\frac{3}{7}$ shillings, and $2\frac{1}{3}$ pence.

Decimal Fractions.

32 Add together ·130055, 900, 57·1, 13·34 and ·00000397, and subtract the result from 1314·9.

33 Multiply 95·376 by ·0283.

34 Divide 16 by ·2, and the result by ·0002.

35 Express $\frac{241}{15424}$ as a decimal.

36 Reduce 8*s.* 11¼*d.* to the decimal of a guinea.

37 Add together ·3211 of a guinea, $\frac{3}{8}$ths of a crown, and ·6925 of a shilling, expressing the result as a decimal of a pound.

E.

Reduction.

1 Reduce 527*l.* 16*s.* 8½*d.* to farthings.
2 Reduce 47 cwt. 1 qr. 16 lbs. 2 oz. to drams.
3 Reduce 13 lbs. 7 oz. 16 grs. to grains.
4 How many square yards, &c., are there in a table 6 ft. 8 in. long by 4 ft. 9 in. broad?
5 In 1,847,638 inches, how many miles, &c.?
6 Reduce 138,297 cubic inches to yards.

Proportion.

7 Find the amount of income tax on 875*l.* 15*s.* at 14*d.* in the pound.
8 If a rental of 8,050*l.* per annum be charged with a land tax at 11*l.* 5*s.* per 100*l.*, what will be the net income?
9 A coach goes from London to Liverpool, at the rate of 9 miles per hour, in 24 hours; in what time would the distance be traversed by a train moving at the rate of 32 miles per hour?
10 A besieged town, containing 22,400 inhabitants, has provisions for 3 weeks; how many must be sent away that they may be able to hold out 7 weeks?
11 If 5 men receive 18*l.* 15*s.* wages for 12 weeks, what will be the wages of 16 men for 20 weeks?
12 If 6 iron bars, 4 ft. long, 3 in broad, and 2 in. thick, weigh 288 lbs., how much will 15 weigh, each 6½ ft. long, 4 in. broad, and 3 in. thick?

Practice.

13 Find the value of 373 at 9*s.* 7¾*d.*
14 Find the value of 821 at 13*s.* 10¾*d.*
15 Find the value of 3lbs. 5oz. 14dwts. 12grs. at 17*s.* 6*d.* per oz.
16 What is the dividend on 2,468*l.* at 15*s.* 6*d.* in the 1*l.*?
17 What is the expense of digging a ditch of which the solid content is 5755 cubic yards, at the rate of 15*s.* 7¾*d.* per yard?
18 Find the value of 136 at 1*l.* 7*s.* 2*d.*

Interest.

19 Find the interest on 4,000*l.* for 9 months at 5 per cent., less income tax at 14*d.* in the pound.

20 Find the interest on 1,158*l.* 17*s.* 6*d.* for 1 yr. 115 d. at $2\frac{1}{2}$ per cent.

21 What sum of money put out to interest for 6 yrs. at $3\frac{1}{2}$ per cent. will amount to 259*l.* 7*s.* 5*d.*?

22 At what rate will the interest on 4127*l.* 10*s.* amount to 92*l.* 17*s.* $4\frac{1}{2}$*d.* in a year?

23 What sum will amount to 45*l.* 0*s.* $9\frac{3}{4}$*d.* in a year at $6\frac{1}{2}$ per cent.?

24 Find the compound interest on 364*l.* for 3 years at $3\frac{1}{4}$ per cent.

Vulgar Fractions.

25 Reduce $\frac{70}{73}\frac{40}{92}$ to its lowest terms.

26 Add together $\frac{1}{4}$, $\frac{5}{12}$, $\frac{7}{15}$, $\frac{3}{20}$.

27 Find the value of $\frac{2}{7}$ of $\frac{5}{11}$ of $5\frac{1}{2} \div 2\frac{1}{3}$.
$\frac{4}{9}$ of $\frac{3}{13} \div 8\frac{2}{3}$.

28 Find the value of $\frac{2}{3}$ of £ + $\frac{3}{7}$ of 2*l.* 10*s.* 2*d.* + $2\frac{1}{3}$ of 16*s.*

29 Reduce 7*l.* 9*s.* 6*d.* to the fraction of 13*l.* 4*s.* 6*d.*

30 Divide the sum of $\frac{3}{5}$ of 3*l.* 7*s.* 6*d.* and $\frac{1}{6}$ of $4\frac{1}{2}$ guineas by $10\frac{5}{7}$.

31 A ship is worth 16,000*l.*, and a person possessed of $\frac{5}{16}$ of it sells $\frac{3}{8}$ of his share; what share has he remaining, and what is it worth?

Decimals.

32 Add together 35·2176, 201·00541, 3·1482, ·054, 216·945, 7543·4.

33 From 3017·215 take 5·7124.

34 Multiply 5412·384 by 1·0023.

35 Divide 21546·872 by ·0542.

36 Reduce $\frac{5}{64}$ and $\frac{3}{14}$ to decimals.

37 Reduce 23·038125 and ·0006875 to vulgar fractions.

38 Reduce $\frac{5}{8}$ of a crown to the decimal of 21*s.*

39 Reduce $6\frac{2}{3}$ cwt. to the decimal of a ton.

40 Reduce $\cdot 1\dot{3}\dot{5}$, and $\cdot 01\dot{2}3\dot{6}$ to vulgar fractions.

F.

Reduction.

1 Reduce 63 cwt. 2 qrs. 5 oz. to drams.

2 Reduce 14 lbs. 11 oz. 11 grs. to grains.

3 Reduce 496 sq. yards 2 sq. feet to inches.
4 How many half-crowns are there in 83,645 dollars, each worth 4*s.* 6*d.*?
5 How many miles, &c. are there in 3,126,749 inches?
6 Reduce 2,099,520 cubic inches to yards.

Proportion.

7 Find the amount of income tax on 945*l.* 17*s.* 6*d.* at 14*d.* in the £.
8 A bankrupt's effects amount to 2,548 guineas, and his debts to 3,057*l.* 12*s.*; what will his creditors receive in the pound?
9 How many yards of paper, 29 inches wide, will paper a room which is 22 feet 9 inches long, 17 feet 3 inches wide, and 9 feet 8 inches high?
10 If 5 men can do a piece of work in 27 days, how long would 6 men be in doing double the quantity?
11 If, when wheat is 11*s.* 3*d.* the bushel, the sixpenny loaf weighs 28 oz., how much should it weigh when wheat is 84*s.* the quarter?
12 If the carriage of 65 lb. for 120 miles costs 6*s.*, how much may I have carried 750 miles for a guinea?

Practice.

13 Find the value of 372 at 8*s.* 7½*d.*
14 Find the value of 19 cwt. 1 qr. 13 lbs. at 2*l.* 11*s.* 4*d.*
15 Find the value of 204 at 3*l.* 12*s.* 5*d.*
16 What is the dividend on 5,398*l.* at 14*s.* 3*d.* in the pound?
17 Find the value of 2 roods 19 poles 12 yards of land at 80*l.* 13*s.* 4*d.* per acre.
18 What must a person whose property is rated at 430*l.* 14*s.* contribute to a poor rate of 10*d.* in the pound?

Interest.

19 Find the interest on 3000*l.* for 8 months at 4 per cent., less income tax at 14*d.* in the £.
20 Find the interest on 260*l.* 10*s.* for 3⅓ years at 4¼ per cent.
21 What sum of money put out to interest for 3½ years at 4 per cent. will amount to 296*l.* 8*s.*?
22 At what rate per cent. will 320*l.* amount to 360*l.* 16*s.* in 3 years?

23 In what time will 171*l.* 7*s.* 6*d.* amount to 217*l.* 1*s.* 6*d.* at $3\frac{1}{3}$ per cent.?

24 Find the compound interest on 250*l.* for 2 years at 4 per cent. per annum, the interest being payable every half year.

Vulgar Fractions.

25 Reduce $\frac{3}{2}\frac{4}{5}\frac{3}{7}\frac{2}{4}$ to its lowest terms, and divide the result by $1\frac{1}{2}$.

26 Add together $\frac{3}{4} + \frac{2}{3} + \frac{7}{12} + \frac{5}{96} + \frac{11}{100}$ and subtract the result from $2\frac{1}{6}$.

27 Reduce $3\frac{4}{7}$ of $\frac{47}{93}$ of $\frac{38}{201}$ to a single fraction, and multiply it by $6\frac{2}{3}$.

28 Add together $\frac{5}{8}$ of a pound, $\frac{7}{9}$ of 2*l.* 10*s.* 3*d.*, and $3\frac{1}{3}$ of 14*s.*

29 Reduce 6 acres, 1 rood, 4 poles to the fraction of $2\frac{1}{2}$ roods.

30 If $\frac{3}{5}$ lb. cost 8*s.* 2*d.*, what must I pay for $5\frac{1}{7}$ lb.?

Decimals.

31 Add together ·004, 2·08, 314·6073, ·19784, 10000, 90·4; and subtract the result from 21118·0116.

32 Multiply 41·018 by 200 and 1·02 by 3·067.

33 Multiply ·671 by ·42 and by ·0420.

34 Divide 738·952716 by ·07 and by 70.

35 Divide 69·814 by ·00521 and by 52100.

36 Reduce $\frac{7}{8}$ of a half crown to the decimal of a guinea.

37 Reduce 2·0445 and ·000625 to vulgar fractions.

38 Reduce $\frac{3}{3\dot{2}}$ and $\frac{40}{33}$ to decimals.

39 Reduce $\cdot 1\dot{4}\dot{4}$ and $\cdot 34\dot{2}1\dot{8}$ to vulgar fractions.

G.

Reduction.

1 How many francs at $9\frac{1}{2}d.$ each are there in 693*l.* 14*s.* 9*d.*?

2 Reduce 787,312 drams to cwts., quarters, &c.

3 Reduce 46 lb. 3 oz. 2 dwts. 2 grs. to grains.

4 The area of a rectangular plot is 101 yds. 3 ft. 90 in., and the length is 36 ft. 9 in. Find the breadth.

5 How many feet are there in 9 miles 3 furlongs 6 poles 1 yard?

6 Reduce 657,918 cubic inches to yards, feet, and inches.

Proportion.

7 Find the income tax at 16*d.* in the pound on 1,405*l.* 15*s.* 11½*d.*

8 Convert 44 lbs. 11 ozs. 11 dwts. 16 grs. troy into avoirdupois weight, one pound avoirdupois being to one pound troy as 175 to 144.

9 The shares of a given railway are at 59½ when consols are at 93½. What should be their value when consols are at 71½?

10 If 49 men can do a piece of work in 130 days of 8 hours each, how many hours a day must 196 men work to do as much in 26 days?

11 If 3½ lbs. of sugar cost 2*s.*, what will be the price of 54 cwt. 2 qrs. 7 lbs.?

12 A coach goes 9 miles in an hour, and a railway train goes 23 miles while the coach goes 11. How much time will be saved on a journey of 138 miles by taking the train instead of the coach?

Practice.

13 Find the value of 1001 at 8*s.* 7½*d.*

14 Find the value of 5 lbs. 9 oz. 7 dwts. 12 grs. of gold, at 3*l.* 17*s.* 10*d.* an ounce.

15 Find the value of 197 at 4*l.* 12*s.* 5½*d.*

16 Find the value of 39 cwt. 1 qr. 20 lbs. at 6*l.* 2*s.* 6*d.* per cwt.

17 What is the dividend on 2485*l.* at 17*s.* 9½*d.* in the pound?

18 What will be the price of 35 acres 2 roods 30 poles at 30*l.* 1*s.* 8*d.* per acre?

Interest.

19 Find the interest at 4¾ per cent. on 1835*l.* 8*s.* 4*d.* lent on the 11th of March and repaid on the 4th of August, the former day being excluded and the latter included.

20 What sum of money put out at simple interest for 3 years at 4½ per cent. will amount to 1602*l.* 0*s.* 1½*d.*?

21 At what rate will the interest on 1270*l.* 18*s.* 9*d.* amount to 76*l.* 5*s.* 1½*d.* in two years?

22 In what time will 1337*l.* 12*s.* 1*d.* amount to 1698*l.* 15*s.* 1¾*d.* at 6 per cent. simple interest?

23 Find the discount on 1511*l.* 7*s.* 1*d.* payable 3¼ years hence at 4 per cent. simple interest.

24 Find the amount of 275*l.* at the end of 4 years at 5 per cent. compound interest.

Vulgar Fractions.

25 Reduce $\frac{2}{4}\frac{3}{6}\frac{2}{4}\frac{0}{3}\frac{5}{6}$ to its lowest terms.

26 Add together $\frac{2}{3}+\frac{1}{5}+\frac{2}{15}+1\frac{3}{7}+{}_{10}\frac{4}{5}$, and subtract the result from $3\frac{1}{15}$.

27 Reduce $\frac{1}{7}$ of $2\frac{1}{3}$ of $6\frac{7}{8}\div 4\frac{2}{5}$ to a simple fraction, and multiply the result by $1\frac{2}{2}\frac{3}{5}$.

28 Add together $\frac{5}{12}$ of a pound, $\frac{3}{7}$ of a guinea, ${}_{13}\frac{4}{}$ of a shilling, and $\frac{8}{13}$ of a half-penny.

29 Reduce 8*l.* 9*s.* 3*d.* to a fraction of 21*l.* 12*s.* 9*d.*, expressing the result in its lowest terms.

30 If $\frac{11}{15}$ of a cwt. be worth 4*l.* 19*s.*, what will be the price of $\frac{5}{9}$ of a ton?

Decimals.

31 Add together ·0003, 5·4, 325·7879, 63·45, 9470, and subtract 2139·05605 from the result.

32 Multiply 21·5839 by ·00158.

33 Multiply ·1356 by ·1458.

34 Divide ·121 by 11, by 110, and by ·0011.

35 Divide 34·952 by 53·07, giving the first four figures of the quotient.

36 Express 8*s.* $1\frac{1}{2}$*d.* as a decimal of a pound.

37 Express ·00175 as a vulgar fraction in its lowest terms.

38 Reduce $\frac{2}{6}\frac{1}{0}\frac{3}{7}\frac{}{5}$ to a decimal.

39 Reduce $\frac{1}{13}$ to a decimal, showing the whole of the circulating period.

40 Reduce ·1309 to a vulgar fraction in its lowest terms.

H.

Reduction.

1 How many francs at $9\frac{1}{2}$*d.* each are there in 1734*l.* 6*s.* $10\frac{1}{2}$*d.*?

2 Reduce 54 cwt. 3 qrs. 18 lbs. 14 oz. to drams.

3 How many pounds, &c. are there in 266,450 grains troy?

4 How many square yards are there in a rectangular plot the length of which is 36 ft. 9 in. and the breadth 24 ft. 10 in.?

5 How many feet are there in 18 miles 6 furlongs 12 poles 2 yards?

6 Reduce 986,877 cubic inches to yards, feet, and inches.

Proportion.

7 Find the income tax on 4,217*l.* 7*s.* 9$\frac{3}{4}$*d.* at 16*d.* in the pound.

8 Convert 22 lbs. 5 oz. 15 dwts. 20 grs. troy into avoirdupois weight, one pound avoirdupois being to one pound troy as 175 to 144.

9 The shares of a given railway are at 44$\frac{5}{8}$ when consols are at 70$\frac{1}{8}$; what should be their price when consols are at 68$\frac{3}{4}$?

10 If 780 men on full rations consume 91 quarters of wheat in 49 days, how many on half rations will consume 69 quarters in 9 days?

11 If 27 cwt. 1 qr. 3 lbs. 8 oz. of sugar cost 87*l.* 6*s.*, what will be the price of 7 lbs.?

12 If a coach travelling 9 miles an hour occupies 4 hours more than a railway train in a journey of 69 miles, what is the proportion between the rates of the coach and the train?

Practice.

13 Find the value of 1003 at 8*s.* 7$\frac{3}{4}$*d.*

14 Find the value of 11 lbs. 6 oz. 15 dwts. of gold, at 3*l.* 17*s.* 10*d.* per ounce.

15 Find the value of 194 at 4*l.* 12*s.* 5$\frac{3}{4}$*d.*

16 Find the value of 3 tons 18 cwt. 3 qrs. 12 lbs. at 2*l.* 17*s.* 9*d.* per cwt.

17 What is the dividend on 4,970*l.* at 8*s.* 10$\frac{3}{4}$*d.* in the pound?

18 Find the price of 25 acres 1 rood 10 poles at 42*l.* 2*s.* 4*d.* per acre?

Interest.

19 Find the interest at 4$\frac{3}{4}$ per cent on 1,376*l.* 11*s.* 3*d.* lent on the 6th of April and repaid on the 30th of August, the former day being excluded and the latter included.

20 What sum of money put out at simple interest for 3 years at 4$\frac{1}{2}$ per cent. will amount to 1281*l.* 12*s.* 1*d.*?

21 At what rate will the interest on 635*l.* 9*s.* 4$\frac{1}{2}$*d.* amount to 38*l.* 2*s.* 6$\frac{3}{4}$*d.* in 2 years?

22 In what time will 2,675*l.* 4*s.* 2*d.* amount to 3,397*l.* 10*s.* 3$\frac{1}{2}$*d.* at 6 per cent. simple interest?

23 Find the discount on 2,267*l.* 0*s.* 7½*d.* payable 3¼ years hence at 4 per cent. simple interest.
24 Find the amount of 550*l.* at the end of 4 years at 5 per cent. compound interest.

Vulgar Fractions.

25 Reduce $\frac{6\,9\,6}{9\,2\,8}\frac{1\,5}{7\,2}$ to its lowest terms.
26 Add together $\frac{1}{3} + \frac{2}{7} + \frac{5}{2\,1} + 1\frac{2}{1\,1} + \frac{8}{7\,7}$, and subtract the result from $2\frac{1}{6}$.
27 Reduce $\frac{1}{8}$ of $2\frac{2}{3}$ of $15\frac{3}{5} \div 16\frac{5}{7}$ to a simple fraction, and multiply the result by $6\frac{3}{7}$.
28 Add together $\frac{5}{7}$ of a pound, $\frac{3}{8}$ of a guinea, $\frac{3}{5\,6\,0}$ of 6*s.* 8*d.*, and $\frac{1}{1\,4}$ of half a crown.
29 Reduce 5*l.* 16*s.* 4*d.* to a fraction of 16*l.* 8*s.* 8*d.*, expressing the result in its lowest terms.
30 If $\frac{1}{9}$ of an ounce troy be worth 5*s.* 10*d.*, what will be the price of $\frac{3}{1\,0}$ of a pound troy?

Decimals.

31 Add together 5·3, ·00015, 643·8797, 62·09, 1035; and subtract 109·000365 from the result.
32 Multiply 32·598 by ·00037.
33 Multiply ·0423 by 32·7.
34 Divide ·169 by 13, by 130, and by ·0013.
35 Divide 3·785 by 21·24, giving the four first figures of the quotient.
36 Express 7*s.* 3¾*d.* as the decimal of a pound.
37 Express ·00325 as a vulgar fraction in its lowest terms.
38 Reduce $\frac{7\,8\,9}{1\,2\,1\,5\,0}$ to a decimal.
39 Reduce $\frac{3\,6}{2\,7\,5}$ to a decimal, showing the whole of the circulating period.
40 Reduce ·18153 to a vulgar fraction in its lowest terms.

I.

Reduction.

1 Reduce 13 miles 5 furlongs 171 yards 2 feet to inches.
2 How many miles, furlongs, &c. are there in 247,391 inches?
3 Reduce 4 tons 17 cwts. 3 qrs. 11 lbs. 6 oz. to oz.

4 How many lbs., oz., &c. are there in 174,283 grains troy?
5 Reduce 7 weeks 3 days 21 hours 4 minutes 17 seconds to seconds.
6 Reduce 9*l.* 19*s.* 11¾*d.* to farthings.

Proportion.

7 Find the value of 14 cwt. 3 qrs. 17 lbs. of sugar at 2*l.* 17*s.* per cwt.
8 Gold of the value of 423,284*l.* arrives from Australia; what is its weight, the price being 3*l.* 18*s.* per oz.?
9 When the income tax was 7*d.* in the pound, a person paid 24*l.* 7*s.* 6*d.*; what additional sum does he pay now that the income tax is 16*d.* in the pound?
10 The price of consols is 88⅜; how many railway shares, the market price of which is 8*l.* 15*s.*, can be purchased for 1,000*l.* consols?
11 The rates of the express and mail trains on a railway are 40 and 28 miles per hour respectively: what time is saved by taking the faster train for a journey of 192 miles?
12 If 21 men take 8 days to dig 20 acres, how many acres will 16 men dig in 12 days?

Practice.

13 Find the value of 473 pounds of coffee at 1*s.* 5½*d.* per pound.
14 Find the value of 27 cwt. of sugar at 2*l.* 18*s.* per cwt.
15 Find the value of 13 cwt. 3 qrs. 17 lbs. of tea at 22*l.* 8*s.* per cwt.
16 Find the value of 132½ tons of iron at 7*l.* 15*s.* 6*d.* per ton.
17 Find the cost of 11 miles 3 furlongs 55 yards of railway at 32,500*l.* per mile.
18 Find the cost of 716 acres at 44*l.* 11*s.* 3¼*d.* per acre.

Interest.

19 Find the interest on 1,250*l.* in 7½ years at 3¼ per cent.
20 Find the amount of 322*l.* 13*s.* for 10¼ years at 3½ per cent. simple interest.
21 Find the discount on 1,450*l.* 10*s.* paid 2 months before it is due at 5 per cent.
22 At what rate will the interest on 1,250*l.* for 5 years amount to 265*l.* 12*s.* 6*d.*?

23 Required the present value of 430*l.* due 4 months hence at 4 per cent. per annum.

24 Find the amount of 240*l.* in 4 years at 3 per cent. compound interest.

Vulgar Fractions.

25 Add together $\frac{2}{5}$, $\frac{4}{9}$, $\frac{3}{10}$, and $\frac{7}{18}$, and divide the result by $7\frac{5}{6}$.

26 Reduce $\frac{6\,3\,9\,8}{7\,3\,1\,2}$ to its lowest terms.

27 Find the value of $\frac{2}{3}$ of $\frac{5}{8}$ + $\frac{3}{7}$ of $\frac{14}{15}$ of a shilling.

28 What is the value of $\frac{5}{36}$ of a guinea?

29 What fraction of a pound is 9*s.* 10*d.*?

30 Reduce $\frac{3}{4}$ of half a crown to the decimal of a pound, and find the value of ·8473 of a cwt.

Decimals.

31 Multiply 3·05 by ·25, and ·32 by ·231.

32 Divide 721·42 by 21·9 to 4 places of decimals.

33 Divide ·1 by ·001 and the quotient by ·2.

34 Reduce $\frac{21}{250}$ to a decimal.

35 Reduce $\frac{3}{11}$ to a decimal, giving the whole of the circulating period.

36 Express ·0125 as a vulgar fraction in its lowest terms.

37 Multiply $\dot{3}$ by $\dot{2}$, and express the product as a circulating decimal.

BOOK-KEEPING.

SINGLE ENTRY.

A.

Read the following memorandum of part of a day's transactions:

1855.

		£	*s.*	*d.*
July 1.	Bought of W. Barton:—			
	10 doz. old Port 54*s.* - -	27	0	0
	Sold to W. Barton:—			
	1 pipe X.V.D. Port 24*l.* -	24	0	0
	Allowed W. Barton:—			
	Dock charges on the above -	1	2	7
	Paid W. Barton - - -	28	2	7
	Received of W. Barton his acceptance at three months . -	24	0	0

1. State what books would be necessary to record these transactions, and which of them would be entered in each.
2. Give a copy of the ledger account of W. Barton as it would stand when all these entries are posted into it.
3. Give a similar copy of my account as it would stand in W. Barton's ledger.

B.

The following is a detailed list of transactions in the order in which they occurred:—

1855.			£	s.	d.
June 1	Balance of Cash in hand		225	0	0
8	Bought of Misa y Bertimati 13 butts Sherry at 14*l.*		182	0	0
„	Sold same to J. Smith at 15*l.*		195	0	0
„	Paid Misa y Bertimati's acc^{t} £182 0 0				
	Less 1¼ Disc^{t} ... 2 5 6				
			179	14	6
9	Rec^{d} from J. Smith acc^{t} duty ...		50	0	0
„	Paid duty on three butts Sherry for J. Smith, 323 galls. at 5*s.* 6*d.* and 5 per cent.		93	5	4
	Entry		0	2	6
11	Bought of Godson and Co. 12 qr. casks Pale Brandy, 312 galls. at 10*s.* 3*d.* ...		159	18	0
„	Sold same to W. Brown, 312 galls. at 10*s.* 6*d.*		163	16	0
„	Rec^{d} of W. Brown ... £163 16 0				
	Less 1¼ Disc^{t} ... 2 1 0				
			161	15	0
12	Bought of Sandeman and Co. 3 pipes Port at 20*l.*		60	0	0
„	Paid duty on, and had home the above 345 galls. 5*s.* 6*d.* and 5 per cent. ...		99	12	4

1855.		£.	s.	d.
June 13	Sold to Richard Smith 3 pipes Port at 63*l.*	189	0	0
„	Rec[d] of R. Smith his acceptance at 3 mos. for his acc[t]	189	0	0
19	Rec[d] of J. Smith balance of am[t] paid for duty ... £43 7 10			
	Add 7 days in[t] ... 0 0 10	43	8	8
„	Rec[d] of J. Smith his acceptance at 3 mos. for am[t] of account 195 0 0			
	Add 2 mos. in[t] at 5 per cent. 1 12 9			
	196 12 9			
	Short measure in 1 butt at regauge, allowed 0 2 9	196	10	0
22	Discounted with Jones Loyd and Co., two bills ... 385 10 0	385	10	0
	Less int. ... 2 7 9			
	Cash rec[d] ... 383 2 3	383	2	3
25	Paid Godson and Co.	159	18	0
26	Paid Sandeman and Co.	60	0	0
July 1	Bought of Tetley and Son 40 bags of cotton, 13,728, at $4\frac{5}{8}d.$	264	11	0
„	Paid wages and petty expenses for June.	13	7	5
6	Accepted a bill drawn by Tetley and Son, 2 mos. from 1st instant	264	11	0
7	Sold T. Singleton 10 bags cotton, 7,368 lbs. at 6*d.*	184	4	0

1855.		£	s.	d.
July 8	Bought of Price and Co. 2 lots Surat cotton—			
	Lot 217, 6 bales, 2,102 lbs., 2½*d.*	21	17	11
	Lot 8, 6 bales, 2,081 lbs., 2½*d.*...	21	13	6
		43	11	5
	„ Paid deposit on above	11	0	0
9	Sold Jones and Co. 6 bales Surat, 2,102 lbs., 3¾*d.*	32	16	10
10	Sold Parker and Maidstone 12 bags cotton, 3,102 lbs. at 4¾*d.*	54	2	6
11	Received of T. Singleton on account ...	100	0	0
13	Received of Jones and Co. amount of their account £32 16 10			
	Less 1¼ ... 0 8 4	32	8	6
14	Sold Jas. Dunkerley 18 bags cotton, 3,258 lbs. at 5*d.*	67	17	6
19	Sold John and G. Buckley, 3 bales Surat 1,043 lbs., 2¾*d.*	11	18	11
22	Paid Price and Co.	32	11	5
	Cash £32 10 0			
	Allowed 0 1 5			
	„ Paid wages, &c. to date	11	7	3

These transactions are

1 To be entered into—
A Sales book,
A Cash book,
An Invoice book,
A Bill book; and

2 Posted into the Ledger.

3 Write down the amounts I owe; and the amounts I am owed; and state what the balance of Cash on hand is on July 22nd.

DOUBLE ENTRY.

A.

The following is a detailed list of transactions in the order in which they occurred:—

1855.		£	s.	d.
June 1	Balance of Cash in hand	225	0	0
8	Bought of Misa y Bertimati 13 butts Sherry at 14*l.*	182	0	0
„	Sold same to J. Smith at 15*l.* ...	195	0	0
„	Paid Misa y Bertimati's acc^{t} ... ... £182 0 0 Less 1¼ Disc^{t} ... 2 5 6	179	14	6
9	Rec^{d} from J. Smith acc^{t} duty	50	0	0
„	Paid duty on 3 butts Sherry for J. Smith, 323 galls. at 5*s.* 6*d.* and 5 per cent.	93	5	4
	Entry	0	2	6
11	Bought of Godson and Co. 12 qr. casks Pale Brandy 312 galls. at 10*s.* 3*d.*...	159	18	0
„	Sold same to W. Brown, 312 galls. at 10*s.* 6*d.*	163	16	0
„	Rec^{d} of W. Brown... £163 16 0 Less 1¼ Disc^{t} ... 2 1 0	161	15	0

1855.		£	s.	d.
June 12	Bought of Sandeman and Co. 3 pipes Port at 20*l.*	60	0	0
	Paid duty on and had home the above, viz., 345 galls. at 5*s.* 6*d.* and 5 per cent.	99	12	4
13	Sold to Richard Smith 3 pipes Port at 63*l.*	189	0	0
„	Rec[d] of R. Smith his acceptance at 3 mos. for his acc[t]	189	0	0
19	Rec[d] of J. Smith balance of am[t] paid for duty ... £43 7 10			
	Add 7 days' int[t] ... 0 0 10	43	8	8
„	Rec[d] of J. Smith his acceptance at 3 mos. for am[t] of account £195 0 0			
	Add 2 mos. int[t] at 5 per cent 1 12 9			
	196 12 9			
„	Short measure in 1 butt at regauge, allowed ... 0 2 9	196	10	0
22	Discounted with Jones Loyd & Co. two bills ... £385 10 0	385	10	0
	Less int[t] ... 2 7 9			
	Cash rec[d] ... 383 2 3	383	2	3
25	Paid Godson and Co.	159	18	0
26	Paid Sandeman and Co.	60	0	0

It is required,

1 To journalize them.

2 To post them; opening all Ledger Acc[ts] that may be necessary.

3 To balance such Acc^{ts} as allow of it; transfer all the fictitious Acc^{ts}, except Cash, to Private Ledger; and to state the Balances of all open Acc^{ts}.

B.

1855.		£	s.	d.
Oct. 1	Cash in hand this day	116	2	9
	Value of Stock on hand	714	3	4
	Cash at Bankers (Smith, Payne & Co.)	543	16	1
2	Sold to J. Bottram :—			
	12 Reams large thick Post at 25*s.*	15	0	0
	12 Reams thick wove Post at 20*s.*	12	0	0
3	Sold to James Simpson:—			
	10 Reams Foolscap 10*s.*	5	0	0
	25 lbs. Sealing Wax 2*s.* 6*d.* ...	3	2	6
„	Bought of J. Whatman and Co. :—			
	50 Reams Blue Royal, 20*s.* ...	50	0	0
	50 Reams Printing Royal 18*s.* 6*d.*	46	5	0
10	Accepted Bill drawn by J. Whatman & Co. for am^{t} of their a/c at 3 mos. ...	96	5	0
„	Rec^{d} of J. Bottram	26	6	6
	viz. a/c ... £27 0 0			
	Less 2½ °/₀ ... 0 13 6			
10	Rec^{d}. of Jas. Simpson	8	0	0
	viz. £8 2 6			
	Less 1¼ °/₀ ... 0 2 6			
12	Bought of J. Hazeldine 600 lbs. super Wax 2*s.*	60	0	0
15	Paid J. Hazeldine by cheque on Smith, Payne & Co.	58	10	0
	viz. a/c ... £60 0 0			
	2½ °/₀ 1 10 0			

1855.		£	s.	d.
Oct. 15	Bought of Joseph Gillott :—			
	200 Gross Magnum B. 8*s*.... ...	80	0	0
„	Sold James Simpson :—			
	50 Gross M. Bs. 8*s*. 9*d*.	21	17	6
	1 Rm. Antiquarian 41*l*.	41	0	0
	50 lbs. super. Wax 2*s*. 6*d*. ...	6	5	0
„	Sold Oliveira and Co. :—			
	100 Reams Foolscap 11*s*.	55	0	0
	150 lbs. super. Wax 2*s*. 6*d*. ...	18	15	0
	50 Gross Magnum B. 8*s*. 6*d*. ...	21	5	0
„	Sold John Smithers :—			
	25 Reams Foolscap 10*s*. 6*d*. ...	13	2	6
	50 Gross Mitchell's S. Pens, 5*s*. ...	12	10	0
	20 Doz. Red Tape 2*s*. 9*d*.... ...	2	15	0
29	Paid Joseph Gillott by cheque on Smith, Payne and Co.	79	0	0
	viz. a/c ... £80 0 0			
	1¼ % 1 0 0			
„	Rec[d] of Oliveira and Co. their acceptance at 3 mos.	95	0	0
„	Paid into Smith, Payne and Co.'s ...	140	0	0

These transactions are to be recorded in the necessary Books, and the Ledger is to be closed and balanced.

C.

1 What distinguishes double entry from single entry ?

2 In the ordinary or Italian system there were formerly but three books ordinarily used; what were they ?

3 In a business where goods are bought and sold, payments received and made in cash and bills, and discount allowed and taken; what books would be necessary, supposing no waste book to be used, and a separate book to be required for each sort of entries ?

4 A merchant of Sydney remits to me 200*l.* to lay out on his account; I am to be allowed 1¼ per cent. upon all purchases I make, and buy of A 60*l.* worth, B 97*l.* worth, C 20*l.* worth, and pay 14*l.* 10*s.* dock and shipping charges. What journal entries would be necessary for properly recording these transactions in my books?

5 Give a copy of my account as it would stand in the ledger of my correspondent, after he has entered the same transactions.

6 In balancing, how should merchandise $^a/_c$ be closed, and on which side of stock $^a/_c$ should the balance fall to show me solvent?

7 If you are acquainted with any method of keeping books by double entry by which the use of a journal is dispensed with, describe it briefly.

D.

1 In what is book-keeping by double entry different from book-keeping by single entry?

2 In the ordinary system of book-keeping by double entry, what books are necessary, and which of them is peculiar to it?

3 A buys goods of B to the amount of 50*l.*: what should be the entry of the transaction in A's journal, and what in B's?

4 If on balancing the ledger the amount on the left hand-side of merchandise $^a/_c$ should be greater than that on the right hand, should you have gained or lost?

5 How would you close merchandise $^a/_c$, and profit and loss $^a/_c$?

6 Suppose that at balancing you were worth 1,250*l.*; that you owed 900*l.* (to two creditors A and B, and to each an equal amount); that your stock on hand was worth 650*l.*; and that your other assets consisted of bills receivable 325*l.*, and accounts owing by C, D, and E, by each an equal amount: What should your ledger balances be to show such a state of affairs?

HISTORY.

A.

1 When, and how, was Christianity first introduced and finally planted in England?
2 Mention the principal events in the life of Edward I.
3 Under whom were the crowns of England and Scotland first united?
4 When did the English power in France come to an end?
5 When, and how, did Great Britain become possessed of India and Canada?
6 Name four celebrated English admirals, with the sovereigns under whom they lived.
7 What is the Habeas Corpus Act?
8 Give a short account of the life of one of the following great men: The Black Prince, Marlborough, Lord Chatham.
9 Name the great civil wars which have taken place in England, and the causes of any one of them.
10 Name the principal battles in the Peninsula, with the years in which they were fought.

B.

1 Mention some of the original sources from which information as to English History may be derived.
2 Give the dates of the following events: the Conquest; the destruction of the Spanish Armada; the Revolution; the accession of King George III.; the Union with Ireland; and the separation of the Crowns of Great Britain and Hanover.
3 Trace the descent of the reigning sovereign from King George I.
4 Name the English sovereigns of the house of Stuart, giving the dates of their respective accessions. State any particulars which you recollect as to the last effort made by a descendant of that family to recover the throne.
5 What was the cause of the American War? How did it terminate?

6 Give a short account of the life of one of the following great men:—Cardinal Wolsey, Sir Walter Raleigh, Oliver Cromwell.

7 Mention some of the methods anciently resorted to by English sovereigns for the purpose of raising a revenue. What was the great subject of contest in the time of Charles I.?

8 State roughly the amount of the Public Revenue in recent years, and the interest of the National Debt. To what period is the origin of the debt assigned, and on what occasions has it been increased during the last 40 years?

9 Mention the principal articles now subject to duties of Customs and Excise, and the most important changes which have recently been made.

10 Into what classes may the Constituencies represented in the House of Commons be divided? What class of Bills invariably originate in that House? What are the ordinary qualifications of voters?

11 What is meant by the phrase "International Law?" Mention some of the Acts which it prohibits. Whence arises the difficulty of enforcing it?

12 Mention some of the arguments by which the execution of Mary Queen of Scots is condemned or vindicated.

C.

1 Give a short account of the Crusades. How was the condition of the English people affected by them?

2 What was the Magna Charta, and when was it signed?

3 Mention the principal events in the reign of Edward III., and the date of his accession.

4 What title had James I. to the English throne?

5 How were the relations of England and Scotland affected by the Union of the Kingdoms in the reign of Queen Anne?

6 State the circumstances attending—
1 The Defence of Gibraltar.
2 The Bombardment of Algiers.

7 What events led to the independence of the American States?

8 Give a short account of the life of one of the following persons:—Cranmer, Lord Strafford, Oliver Cromwell.

9 State briefly, with dates, the occasions on which the following battles were fought:—Flodden, Ramilies, Poitiers, Navarino, Marston Moor, Austerlitz, Dettingen.

10 What eminent poets flourished in the time of Queen Anne? Write a short life of any one of them.

D.

1 What was the Heptarchy? From what is its name derived?

2 Give, with dates, a list of the English sovereigns from Richard II. to Charles I.

3 Mention which of the kings of England have been deposed, or have met with a violent death.

4 When and under what circumstances was Magna Charta obtained? What were the liberties of the subject secured by it?

5 Mention the principal events which took place in the reign of Richard II.

6 Give a short account of the life of *one* of the following persons:—Richard Earl of Warwick, Harley Earl of Oxford, Sir Robert Walpole.

7 What was the state of England at home and abroad during the protectorate of Cromwell?

8 How has the national prosperity of England been affected by the American war of independence?

9 State very briefly, with dates, the occasions on which the following battles were fought:—
Flodden, Malplaquet, Salamanca, Dettingen, Culloden, Agincourt, Navarino.

10 What were the chief provisions and alterations introduced by the Reform Bill? What is the right of the House of Commons in regard to taxes; and on what constitutional principle is it founded?

E.

1 Give a very short account of the origin and progress of the Crusades. What English sovereigns or eminent persons were engaged in them?

2 Give, with dates, a list of the English sovereigns from Richard III. to Queen Anne.

3 Who was the first queen regnant of England? Mention her parentage, contemporary sovereigns, and the most conspicuous events of her reign.

4 Give some account of the Petition of Right, the Habeas Corpus Act, and the Act of Settlement.

5 Name the sovereigns contemporary with Queen Victoria, and trace her descent and that of the Crown from George I.

6 Give some account of the leading statesmen in *one* of the following reigns:—
(*a*) Edward VI. (*b*) Anne. (*c*) George II.

7 What circumstances led to the rupture between Charles I. and his Parliament?

8 Account for the possession of the Canadas by the Crown of England.

9 State very briefly, with dates, the occasions on which the following battles took place:—
Flodden, Oudenarde, Naseby, Hastings, Poitiers, Vittoria, Dettingen.

10 In what respects were the liberties established by Magna Charta violated by the Tudors and Stuarts? What circumstances favoured the encroachments of power under the Tudors?

F.

1 Enumerate the principal events in the reign of Henry II.

2 Name the sovereigns who ascended the English throne in the fifteenth century, giving the dates of their accession, and their relationship to each other.

3 How did the titles of "Prince of Wales" and of "Defender of the Faith" originate?

4 What European sovereigns or potentates were contemporary with Henry VIII.? Describe any transactions which took place between Henry and any of them.

5 What were the Bill of Rights, the Instrument of Government, and the Act of Settlement?

6 What was the nature of the dispute in the Wars of the Roses; *and* which was the last battle in that struggle?

7 Give some account of the leading statesmen in *one* of the following reigns :—
(*a*) James I. (*b*) Charles II. (*c*) George I.

8 Give some account of the origin and gradual rise of the British Empire in India.

9 What was the Cabal in the reign of Charles II., and why was it so called?

10 State very briefly, with dates, the occasions on which the following battles were fought :—
Barnet, the Boyne, Falkirk, Corunna, Tewkesbury, Toulouse, Copenhagen.

11 Give the dates and principal articles of agreement of the following treaties :—
Dover, Utrecht, Versailles, Paris.

G.

1 Give a list, with dates, of the English kings—
(*a*) From Henry I. to Edward I.
(*b*) From James I. to William III.

2 Name the kings of England who were not succeeded on the throne by a son, daughter, brother, or sister.

3 Show that King John was not rightfully entitled, at the time of his accession, to the throne of England. In what manner did he become so?

4 What were the Petition of Right, the Test Act, the Habeas Corpus Act, the Act of Uniformity, and the Act of Navigation?

5 What were the claims—
(1) Of Edward III. to the throne of France?
(2) Of James I. and of George I. to the crown of England?

6 Give some account of the leading statesmen in *one* of the following reigns :—
(*a*) Henry VII. (*b*) James II. (*c*) George II.

7 When did England gain possession of the following places, and from whom respectively were they taken :—
Canada, the Cape of Good Hope, Corfu, Ceylon, and New York?

8 What was the Triple Alliance in the reign of Charles II.? How did the king act in carrying out its provisions?
9 State very briefly, with dates, the occasions on which the following battles were fought:—
Naseby, Bosworth, Ramilies, Salamanca, Aboukir, Quatre-Bras.
10 Give the dates and principal articles of agreement of the following treaties:—
Dover, Utrecht, Westphalia, Versailles.

GEOGRAPHY.

A.

1 Give the boundaries of England, Wales, Scotland and Ireland respectively.
2 Give the names and positions of the various islands belonging to the British group.
3 Name the counties and principal towns on the North-western line from London to Edinburgh.
4 Name the dockyards and chief mercantile seaports of Great Britain, with the counties in which they are situated.
5 What are the principal exports of Great Britain, and the localities where they are produced?
6 Describe the positions of the following British possessions: Gibraltar, Corfu, Heligoland, Sierra Leone, Mauritius, Falkland Islands, Jamaica, Newfoundland, and Guiana.
7 Trace the course of the Danube from its source to its mouth.
8 What are the principal seaports of France?
9 Name six rivers of Russia, with the seas into which they fall.
10 Name the capitals of the following countries: Prussia, Sweden, Persia, China, and Canada.

B.

1 What is the circumference of the globe in miles? Explain and derive the word "hemisphere." How are latitude and longitude measured?

2 Name the six northern counties of England and their capitals. In which of the English counties are hops grown? What are the two commodities which principally constitute the natural wealth of the country?
3 What are the small islands belonging to England?
4 Name the principal rivers of England, and the seas into which they respectively fall.
5 What are the principal cities and towns of Scotland, and in what counties are they situated? In what district is the population most concentrated?
6 Name the four Irish provinces, and the principal Irish ports.
7 What languages are spoken in different parts of the United Kingdom?
8 What articles have constituted the principal imports from Russia in recent years? What other countries are able to supply the same commodities?
9 From what countries do we obtain tea, coffee, sugar, wine, cotton, wool, and palm oil?
10 Mention the principal German States, their capitals, and the titles of their sovereigns.
11 What is the date ordinarily assigned to the discovery of America? What are the British Colonies in the northern, and the independent States in the southern, portion of the continent?
12 Give the names, capitals, and position of the Australian Colonies.
13 Mention the colonial possessions of other European States.
14 Explain briefly the advantages or inconveniences which may result from the maintenance of sovereignty over distant dependencies.

C.

1 Explain fully how latitude and longitude are measured. Between what limits of latitude is Great Britain included?
2 Describe the position of the principal British colonies and dependencies.
3 State the different articles of commerce we import from each of them respectively.
4 In what countries are the following places situated; Trafalgar, Elsinore, Estamboul, Beirout, Acapulco, Aboukir, Buenos Ayres, Belgrade, Abergavenny, Lima, Cayenne, Aden?

5 Describe the course of six rivers of France, mentioning the chief cities on each.
6 Name the principal seaports on the Mediterranean, and the countries to which they severally belong.
7 What was the population of Great Britain—
1 At the beginning of the present century?
2 At the time of taking the last census?
Give the population of any other country of Europe.
8 Mention the principal mountain ranges of Europe and Asia; and the height of some of the loftiest mountains.
9 Describe accurately the situation of the following islands: Malta, Corfu, Bermuda, Minorca, Nevis, Negropont, Borneo, Guernsey, Mauritius, Owhyhee, Juan Fernandez.
10 What are the most important natural productions of the following countries: England, India, Spain, France, China, Canada, and the United States of North America.
11 By what counties are Derbyshire and Wiltshire respectively bounded?
12 Through what counties would a person pass who travelled in a straight line from London to Exeter?
13 Name the Scotch counties and their capitals.
14 Draw a map of Ireland, marking the positions of Dublin, Cork, Belfast, Limerick and Waterford.

D.

1 Explain fully how latitude and longitude are measured. Between what limits of latitude is Great Britain included?
2 Describe the position of the principal British colonies and dependencies. Into how many presidencies is India divided? What are their capitals?
3 State the different articles of commerce we import from each of them respectively.
4 In what countries are the following places situated: Trafalgar, Elsinore, Estamboul, Beirout, Acapulco, Aboukir, Buenos Ayres, Belgrade, Abergavenny, Lima, Cayenne, Aden?
5 Name some of the principal rivers of India, and give a general account of the nature of the country through which they flow.
6 Name the principal seaports on the Mediterranean, and the *countries to* which they severally belong.

7 To what districts of India are the terms Deccan, and Carnatic, applied?

8 Mention the principal mountain ranges of Europe and Asia, and the height of some of the loftiest mountains.

9 Describe accurately the situation of the following islands: Malta, Corfu, Bermuda, Minorca, Lewis, Negropont, Borneo, Guernsey, Mauritius, Owhyhee, Juan Fernandez.

10 What are the most important natural productions of the following countries: England, India, Spain, France, China, Canada, and the United States of North America?

11 By what counties are Derbyshire and Wiltshire respectively bounded?

12 Through what counties would a person pass who travelled in a straight line from London to Exeter?

13 In what provinces are Dacca and Arcot respectively situated? Name the districts in which cotton and opium are staple productions.

14 Draw a map of Ireland, marking the positions of Dublin, Cork, Belfast, Limerick, and Waterford.

E.

1 How are latitude and longitude measured? Mention any countries which have nearly the same latitude as London.

2 Into how many counties is England divided? Which are the counties bordering upon Wales?

3 Name the Irish provinces, mentioning their relative situation, and the principal towns in any two of them.

4 Describe the course of a ship from Newcastle-on-Tyne to the Black Sea.

5 Draw a map (1) of any one English county, (2) of any French department, placing in them the rivers and the names of the six principal towns.

6 Where are the following cities situated, and for what are they severally remarkable:—Alexandria, Delhi, Philadelphia, Shanghai, Kars, Mooltan, Mosul, Worms, Nantes, Nancy, Trebizond?

7 Trace the course of four of the following rivers, stating the countries through which they flow, and the principal towns on their banks:—Rhine, Rhone, Indus, Oder, Ingour, Bug.

8 What is the country generally known by the name of the Peninsula? Mention the names of any towns or rivers in that country to which historical interest is attached, and describe their situation.

9 Describe the situation, height, length, and general appearance of the following mountain chains:—The Cevennes, the Pyrenees, the Sierra Nevada, the Alps, and the Apennines.

10 What are the principal imports which Great Britain receives from America?

F.

1 Explain the terms latitude and longitude. Estimate roughly the latitude and longitude of Madrid, Naples, Pekin, New York, and St. Petersburg.

2 Name (*a*) the Welsh counties bordering on the Bristol Channel.

(*b*) The two westernmost counties of Connaught.

(*c*) The two northernmost counties of the Scotch mainland.

(*d*) The counties crossed by a straight line from Lincoln to Shrewsbury.

3 What countries are drained by the Thames, Severn, Trent, and Ouse respectively. Name the chief ports of their respective estuaries.

4 Describe the position of the following headlands:—North Cape, Cape Clear, Cape Horn, the Naze, Cape St. Vincent, the Lizard, Cape Guardafui, Cape Cod, Cape St. Roque.

5 On a rough outline of the Mediterranean mark the positions of Alexandria, Acre, Barcelona, Tunis, Smyrna, Leghorn, Athens, Genoa.

6 On a rough outline map of India, mark Calcutta, Bombay, Madras, Agra, Benares, Simla, Lahore, the Ganges, the Indus, the Himalayas. Which is the most fertile district of India? Whence do calico and muslin derive their names?

7 From what countries do we obtain cotton, deals, tobacco, tea, *mahogany*, gamboge, guano, currants, sherry?

8 Through what countries do the following rivers flow, and into what seas do they fall:—The Rhine, the Mississippi, the Vistula, the Hudson, the Volga, the St. Lawrence?

9 Give a list of the Atlantic States of the American Union, distinguishing the New England States.

10 State the boundaries of Europe. Name its independent states, with the capital city of each.

G.

1 How are the relative positions of places on the earth's surface determined? State roughly the latitude and longitude of Dublin, Paris, Rome, and of the capital of the colony of New Zealand.

2 Name (*a*) the counties which a collier would pass in sailing from the mouth of the Tyne to Gravesend.

(*b*) The counties on the coast between Belfast and Dublin.

(*c*) The counties on the Highland border of Scotland.

3 What counties are drained by the Tyne, Avon, Tees, and Trent respectively? Name the chief ports of their respective estuaries.

4 Enumerate the principal cities or towns on the Thames, the Elbe, the Oder, the Rhine, the Danube, and the Vistula.

5 Into what provinces was France anciently divided? Specify those which have been at any time united with the Crown of England, and mention any of the departments which most nearly correspond to them.

6 Enumerate the dependencies of the British Crown or of the East India Company settled or acquired within the last 30 years.

7 Describe as accurately as you can the positions of Heligoland, Madagascar, Singapore, St. Thomas' Island, Juan Fernandez, the Moluccas, and Vancouver's Island. On what nations are they respectively dependent? Name the productions of those among them which are commercially important.

8 From what countries do we import corn, coffee, furs, deals, sago, indigo, palm-oil, mahogany?

9 What states constituted the American Union at the time of the Declaration of Independence? How many have since been added?
Name the chief cities of Pennsylvania, Massachusetts, Virginia, Ohio, and Maine.
10 Enumerate the crowns and principalities—
(*a*) Of Germany. (*b*) Of Italy.

H.

1 What is the circumference of the globe in miles? Explain and derive the word hemisphere. How are latitude and longitude measured?
2 Mention the states into which Italy is divided, their capitals, and the titles of their sovereigns.
3 Give the names, capitals, and positions of the Australian dependencies of Great Britain.
4 What is the "Zollverein"?
5 Draw a map of Scotland, marking the principal towns.
6 Name the dockyards and chief mercantile seaports of Great Britain, and the counties in which they are situated.
7 Through what counties does the railway from Birmingham to Exeter pass?
8 What are the principal imports of Great Britain, and from what countries are they obtained?
9 Into how many departments is France divided? Mention any names which you recollect. What was the ancient division?

LATIN.

The passages selected for translation were generally taken from Livy, Tacitus, Cicero, Horace and Virgil.

FRENCH.

In prose and verse, generally from the historians and dramatic writers.

GERMAN.

Passages in prose and verse from some historian or moral writer were given to be rendered into Latin and French.

PART III.

A.

Competitive Examination for Junior Situations in the War Department.

ARITHMETIC, &c.

1 Reduce 45*l.* 11*s.* 9¾*d.* to farthings.

2 Find the number of ounces in 18 tons 9 cwt. 3 qrs. 15 lbs.

3 How many grains are there in 17 lbs. 3 oz. 7 dwts.?

4 The breadth of a rectangular field is 26 yds. 2 ft. 8 in., and the area is one acre: find the length.

5 The side of a solid cube is 7 ft. 3 in.: find the content in solid yards, feet, and inches.

6 If the price of one ounce of gold is 3*l.* 10*s.*, what is the price of 14 ingots, each weighing 3 lbs. 7 oz. 14 dwts. 21 grs.?

7 If one yard of cloth cost 15*s.* 6¾*d.*, what will be the price of 32½ yards at the same rate?

8 Find the price of 56 tons 15 cwt. 2 qrs. 21 lbs. at 24*l.* 6*s.* 8*d.* per ton.

9 If 90*s.* will pay 5 men for 12 days' work, how much will pay 32 men for 24 days' work?

Explain the principle of the rule by which you proceed.

What should the result be if the efficiency of the second set were half that of the first, and their day's work five-fourths as long?

10 At what rate per cent. per annum simple interest will 300*l.* amount to 414*l.* in 8 years?

11 What will be the amount of 550*l.* in three years at 5½ per cent. per annum compound interest?

12 Find the amount of 875*l.* at the end of 15 months at 4 per cent. per annum compound interest, the interest accruing quarterly.

13 Add together $\frac{1}{6}$, $2\frac{1}{7}$, and $13\frac{3}{10}$; divide by $13\frac{1}{14}$, and subtract the result from $5\frac{3}{70}$.

14 Add together $\frac{1}{15}$ of a shilling, $\frac{11}{60}$ of half a crown, $\frac{2}{5}$ of a pound, and $\frac{1}{6}$ of a guinea. Express the result as the decimal of a pound.

15 Find the greatest common measure of 3042 and 3094, and reduce $\frac{3042}{3094}$ to its lowest terms.

16 Multiply 192·336 by ·73307.

17 Divide 16 by ·2, and the result by ·0002. What is the rule as to the place of the decimal point in multiplication and division?

18 Express ·01056 and $\cdot 15\dot{8}\dot{6}\dot{3}$ as vulgar fractions in their lowest terms.

19 Explain any rule with which you are acquainted for determining "Equated time of payment," reckoning either simple or compound interest, and apply it to find what sum paid two years hence will be an equivalent for 100*l.* due one year hence, and 500*l.* due three years hence, the rate of interest being 5 per cent.

20 If 23 lbs. at 2*s.* are mixed with 27 lbs. at 3*s.*, and the mixture is sold at 2*s.* 9*d.* per lb., what is the total gain; and what is the gain per cent. on the money laid out?

21 Extract the square root of 106929; also the square root of 803·7 to two places of decimals.

22 Explain some of the uses of logarithms. Given log. 2= ·301030 and log. 3 = ·477844, find the logarithms of 5, of 15, and of ·15.

23 Explain the meaning of the term *local value.* Have Roman numerals any local value?

24 Add $\frac{x-3y}{x+y}$ and $\frac{x+3y}{x-y}$

25 Divide $81a^4-16b^4$ by $3a+2b$.

26 Solve the equations,

(*a*) $\frac{x}{z}+\frac{x+1}{7}=x-2.$

(*b*) $x^2-\frac{x}{7}=48.$

27 It is required to divide the number 34 into two parts, such that the difference between the greater and 18 shall be to the difference between 18 and the less in the ratio of 2 to 3.

28 Sum the arithmetical progression $1 + 5 + 9 + \ldots$ to 21 terms.

ADDITION.

A.

Acres	*r.*	*p.*
129	3	38
42	0	11
315	3	33
83	0	0
168	2	9
58	0	6
234	0	5
163	0	32
299	2	19
38	3	6
37	2	2
207	2	13
124	1	3
103	0	11
186	3	26
211	2	3
309	3	6
172	1	23
357	2	7
76	3	19
137	1	22
155	3	23

B.

£	*s.*	*d.*
46	10	0
19	0	0
77	0	0
34	12	6
70	0	0
26	0	0
42	0	0
59	5	0
91	0	0
11	0	0
14	0	0
110	0	0
42	5	0
40	0	0
68	0	0
61	0	0
143	15	0
60	0	0
116	5	0
23	0	0
60	0	0
58	0	0

C.

Tons	*cwts.*	*qrs.*	*lbs.*
2,521	13	3	27
3,789	15	2	23
9,381	1	1	17
6,047	10	2	7
7,398	18	1	5
3,692	7	3	2
4,521	3	2	15
6,789	2	1	13
7,047	1	3	12

D.

£	*s.*	*d.*
1,728	7	$11\frac{1}{2}$
1,356	18	2
9,508	11	$3\frac{3}{4}$
2,817	15	2
1,958	3	$7\frac{1}{2}$
13,189	2	$1\frac{1}{2}$
430	13	6
17,980	2	$9\frac{1}{2}$
4,387	11	2

HISTORY.

1 Give the dates of the following events, adopting the common chronology :—

(*a*) The Deluge ;
(*b*) The Exodus ;
(*c*) The Building of Rome ;
(*d*) The Peloponnesian War ;
(*e*) The Hegira, or Flight of Mahomet ;
(*f*) The Coronation of Charlemagne ;
(*g*) The Invention of Printing ;
(*h*) The Revolution ; and
(*i*) The Separation of the Crowns of Great Britain and Hanover.

2 Give the current traditions as to the life and exploits of King Alfred.

3 What was the origin of William the Conqueror ? How did he obtain the crown of England ?

4 Under what king were the crowns of England and Scotland united ?

5 Trace the descent of the reigning sovereign from King George I.

6 Name the sovereigns who ascended the throne of England in the 17th century, giving the dates of their accession, their relationship to each other, and the places at which they respectively died.

7 What are the peculiar privileges of the House of Commons ? What great changes were made by the Reform Bill ?

8 Are the laws of England and Scotland in all respects identical ? If not, mention points in which they differ.

9 What important constitutional questions were raised,—(1) by the illness of George III.,—(2) by the protracted trial of Warren Hastings ?

10 Mention any points in which Scripture History is confirmed by classical writers.

11 It has been said, that "the only event in the history of the "human species which admits of comparison with the "propagation of Christianity is the success of Mahomet-"*anism.*" In what points does the parallel fail ?

12 What were, at different times, the titles of the chief magistrates of republican Rome? Name the first and last of the 12 Cæsars, and the principal writers of the Augustan era.

13 A work has been written on "The Fifteen Decisive Battles of the World;" mention any battles which you think entitled to be so termed, giving your reasons.

14 In what year was the independence of the United States acknowledged? What is their constitution? Is that of any European state at all similar, and in what respects?

15 Between what states and at what period was Poland divided? What was its ancient form of government?

16 Name the two European states which have most recently come into existence.

17 State any particulars which you know as to the history of the Crimea. Whence arose its importance in a commercial point of view? Give the classic legend.

18 Mention any benefical changes accomplished at the *commencement* of the first French revolution.

19 The last hundred years being altogether excluded, what was, in your opinion, the most glorious and what was the most disgraceful era in English History? Give your reasons in detail.

GEOGRAPHY.

1 What is meant by latitude and longitude, and from what fixed lines are they measured?

2 What other circles are used for geographical purposes, and how are their positions determined?

3 Name the principal natural products and manufactures of Great Britain, and the localities in which they are found or carried on.

4 From what countries do we import tea, coffee, sugar, tallow, wool, palm oil?

5 Through what counties and towns does the Great Northern line of railway from London to Edinburgh pass?

6 Name the capitals of the following countries: Portugal, Kingdom of Sardinia, Norway, Bavaria, Georgia, Arabia, Thibet, Peru.

7 Draw an outline map showing the overland route to India.
8 Name the highest mountains in the four continents, with their heights.
9 What are the principal uses of mountains?
10 Mention seven colonial possessions of Great Britain, specifying wherein their political and commercial importance to this country consists.
11 Describe the trade-winds, and explain their cause.
12 Describe the form of the various continents of the globe, and show how it has influenced the national character and history of their inhabitants.

ENGLISH GRAMMAR.

1 Write down the plurals of the following substantives: penny, staff, grief, die, sheep, wharf, spoonful, chimney.
2 Write down the past tenses and past participles of the following verbs: arise, bid, drive, load, smite, work.
3 What is meant by "government" in grammar? What parts of speech govern objective cases? Give examples of each.
4 Construct sentences, exemplifying the use of the relative pronouns in the possessive and objective cases.
5 Explain the grammatical construction of the following sentences, pointing out and correcting any errors; parse the words in the first, and write the second in prose:—

"It was me who they wished to see."

"For what we know must be, and is as common
As any the most vulgar thing to sense,
Why should we, in our peevish opposition,
Take it to heart?"

"That remarkable man, one of the few eastern sovereigns in ancient times who has earned for himself an enduring place in history, had succeeded at a very early age to the throne of Pontus."

6 From what languages is English derived? Mention the classes of words principally taken from each, with *examples.*

7 To what general family of languages do those alluded to in the preceding questions belong; what others in Europe belong to the same?

CORRESPONDENCE.

With a view to establishing a branch business at Glasgow, a person is sent to make inquiries. Write a letter of instructions directing him to inform himself on the spot whether there is a demand for the class of goods [name any articles of merchandise you please]; whether there is much competition in the trade; whether other houses have succeeded, or otherwise, in it; as to home and export trade respectively; as to terms, length of credit, and mode of settlement; and any other points which may suggest themselves to you.

B.

Competitive Examination for Junior Situations in the Department of the Committee of Council on Education.

ARITHMETIC.

PAPER I.

1 Reduce 15 lbs. 10 ozs. 14 grs. troy to grains, and 34,677 square yards to acres, &c.

2 The length of a French metre being 39·37 inches, find the number of solid feet and inches in a cube the length of whose side is 2 metres.

3 If $\frac{13}{17}$ cwt. be worth 14*l.* 6*s.*, what will be the value of $\frac{7}{11}$ of a ton?

4 If 3*l.* = 20 thalers, 25 thalers = 93 francs, and 62 francs = 25 gulden: find how many gulden are equivalent to one pound sterling.

5 The population of Great Britain in 1851 was 21,121,967; and the increase during the previous half century had been 93·5 per cent. What was the population in 1801?

6 Find by the method of practice the price of 8 cwt. 1 qr. 12 lbs. at 4*l.* 12*s.* 5½*d.* per quarter.

7 A person who has 2,954*l.* in the 3 per cents. at 80½, transfers his capital into the 4 per cents. at 98: find the alteration in his income.

8 A person's average annual expenditure from the year 1833 to 1853 inclusive is 293*l.* 17*s.* 4*d.* He finds that in 1833 he spent 283*l.* 17*s.* 10*d.*, and in 1854 365*l.* 14*s.* 1*d.*; what was his average annual expenditure from 1834 to 1854 inclusive?

9 If 20 horses and 196 sheep can be kept 18 days for 151*l.* 10*s.*, what sum will keep 15 horses and 72 sheep for 8 days, supposing 5 horses to eat as much as 76 sheep?

10 Find how many yards of paper, $\frac{7}{8}$ of a yard wide, will paper a room whose length is 26 ft. 4 in., its breadth 18 ft. 8 in., and its height 12 ft. 3 in.

11 If 20 lbs. 4 ozs. of tea at 5*s.* 10*d.* per pound be mixed with 46 lbs. 6 ozs. at 4*s.* 3*d.*, and 35 lbs. 6 ozs. at 6*s.* 8*d.*, and the mixture be sold at 6*s.* per pound, what will be the gain or loss, and what the gain or loss per cent.?

12 Find the amount of 13,333*l.* 6*s.* 8*d.* for 4 years at 5 per cent. compound interest.

13 At what rate per cent. will 651*l.* 13*s.* 4*d.* amount to 748*l.* 12*s.* 0½*d.* in 3½ years, at simple interest?

14 Find the discount on 126*l.* 13*s.* 4*d.* due 8 months hence at 4 per cent. simple interest. What would be the amount of error in this case if interest were taken instead of discount, and in whose favour would the error be?

15 Reduce to their simplest forms the expressions—

(*a*) $\frac{3}{5}+\frac{4}{3}+\frac{7}{6}+\frac{11}{30}+\frac{2}{45}-\frac{7}{18}$.

(*b*) $\frac{3}{7}$ of $\frac{4\frac{5}{9}}{12\frac{1}{3}}$ of $\frac{3\frac{4}{11}}{11\frac{5}{7}} \div 1\frac{1}{11}$.

16 Find the sum of ·375 of a guinea + 2·1875 of a crown + ·3 of 7*s.* 6*d.*

17 (*a*) Multiply 2·7 by ·27 and their product by ·027.

(*b*) Divide 17·28 by ·0144, and 42·0463 by 136.

18 Extract the square roots of 531441 and of $32\frac{1}{9}$.

19 Mention the advantage of a decimal coinage. If 1*l.*=10 florins=100 cents=1,000 mils.; show how the addition of 896*l.* 5*f.* 4c. 7*m.*, 391*l.* 5*f.* 7*m.*, 23*l.* 9*c.* 6*m.*, would be performed.

20 Explain the nature and use of logarithms, and the advantages of selecting the number 10 as the base of tabular logarithms.

21 Having given log. 6·234 = ·794767 and log. 6·235 = ·794836, find log. 623472, and the number whose logarithm is 2·794800.

PAPER II.

N.B. It is strongly recommended that no candidate who finds that he can employ his time advantageously on the other paper should attempt any question in this.

1 Multiply 4751*l.* 17*s.* $4\frac{1}{2}$*d.* by 34.

2 Multiply 1647*l.* 8*s.* $2\frac{1}{2}$*d.* by 635.

3 Divide 106397320524 by 12.

4 Divide 8740434091488 by 876.

5 Divide 75919*l.* 11*s.* 7*d.* by 7.

6 Divide 611360*l.* 5*s.* 8*d.* by 623.

7 Write in figures (1) ninety thousand and forty, (2) three hundred and four million forty thousand and four.

8 There are two mountains such that if 126 feet are added to four times the height of the lower one, the sum is half the difference between their heights; given that the lower one is 441 feet high, find the height of the other.

9 What is the length of the longest day at a place where the sun rises on that day at 3h. 49m. 51s.?

10 How many entire days have elapsed since the opening of the Great Exhibition in Hyde Park?

CALCULATION OF AVERAGES.

The two Tables annexed give :—

(1) The total number of contributors to the Income Tax under Schedule D, arranged in 17 Classes.

(2) The Aggregate amount of Incomes in each Class.

£		£		£	
	Under	150	35751	27135611	
150	to	200	39397	61950388	
200	to	300	30318	67509000	
300	to	400	14913	47870611	
400	to	500	7227	30621999	
500	to	600	5493	28306766	
600	to	700	3083	19120733	
700	to	800	2165	15771855	
800	to	900	1693	14016266	
900	to	1,000	877	8159266	
1,000	to	2,000	5302	69329911	
2,000	to	3,000	1539	35408777	
3,000	to	4,000	745	24679577	
4,000	to	5,000	421	18139200	
5,000	to	10,000	796	52912588	
10,000	to	50,000	374	65826266	
50,000	and upwards	-	20	14312422	
	Totals				

Calculate :—

(1) The Average Income of Persons in each Class.

(2) The General Average Income of all Persons contributing to the Income Tax under Schedule D.

BOOK-KEEPING.

ELEMENTARY.

1 What is the meaning of the terms "debit" and "credit"?

2 Which side of an account book is allotted to debit accounts, and which to credit accounts?

3 What is the balance of an account?

4 On which side of a cash book must the balance always fall?

5 On which side of a cash book should an amount paid away be entered?

6 A transmits to B. 400*l.*, with directions to pay J. Brown, 38*l.* 2*s.* 6*d.*, J. Smith 49*l.* 5*s.* 9*d.*, W. Eve 50*l.*, W. Robinson 99*l.* 13*s.* 9*d.*, each less $2\frac{1}{2}$ per cent.; and W. Walker 47*l.* 16*s.* 8*d.*, H. Biggs 53*l.* 13*s.* 4*d.*, and Charles Bunce 61*l.* 8*s.*, each less 5 per cent.; and to retain the balance, if any, till further instructions. Supposing that B has done all this, make out such an account as it would be necessary for him to send to A, to show exactly what has taken place.

7 Give the entries of the same transactions, as A would enter them in his cash book on receiving the above account.

8 State in few words what "book-keeping by double entry" is, and in what it is preferable to "book-keeping by single entry."

ALGEBRA AND GEOMETRY.

1 Multiply together $x+2\sqrt{xy}+3y$, and $x-2\sqrt{xy}+y$; also $a+b+c$, $-a+b+c$, $a-b+c$, and $a+b-c$.

2 Simplify the expression—

$$\frac{x^3-y^3+2x^{\frac{3}{2}}y^{\frac{1}{2}}+2x^{\frac{1}{2}}y^{\frac{3}{2}}}{x^3+y^3}$$

3 Extract the square root of—

$$a^2x^2+4abx+6ac+4b^2+\frac{12bc}{x}+\frac{9c^2}{x^2}$$

4 Solve the equations—

(1) $\frac{x}{8}-\frac{2(x-1)}{5}=\frac{3x-4}{15}+\frac{x}{12}$

(2) $7x^2-11x=6.$

(3) $x^4+1=x(x^2-x\sqrt{2}+1).$

(4) $$\begin{cases}\dfrac{x+y-\sqrt{x^2+y^2}}{x+y+\sqrt{x^2+y^2}}=\dfrac{2x}{a}\\[2ex] \dfrac{x}{y}=\sqrt{\dfrac{a+x}{a-y}}\end{cases}$$

5 Find three numbers such that the differences between each and the sum of the other two and their product are in the ratios 1 : 3 : 5 : 192.

6 Prove that—

(1) The difference of the squares of any two odd numbers is divisible by 8.

(2) Every square is the sum of as many consecutive odd numbers as there are units in the root.

7 How many terms are there in the expansion of $(3x - 8y)^6$? Write down the third term.

8 Prove the formulæ for the summation of arithmetical and geometric series; and sum the following :—

$7 + 3 - 1 - \ldots$ to n terms.

$1 - \frac{1}{3} + \frac{1}{9} - \ldots$ to infinity.

9 Find the least positive integer solution of $13x - 9y = 3$.

10 Determine the number of permutations of n letters taken r together, noticing the case in which $n = r$, and certain letters recur. Ex.: Sebastopol.

11 Prove the formulæ—

$$\cos(A + B) = \cos A \cos B \mp \sin A \sin B.$$

$$\cos 2A + \cos 4A = 2 \cos 3A \cos A.$$

12 Given two sides and the included angle of a triangle: find the other angles and the third side.

13 Determine the exponential expressions for sin A and cos A.

14 Describe Hadley's sextant.

15 A triangular field, A B C, has two rectilinear sides, A B, A C, and one curvilinear, B C. Explain how to survey it; and if it be found that A B = 12·53 chains rectilinear distance, B C = 8·46 chains, and perpendicular from C on A B = 5·25 chains, determine the approximate area, assuming any curvature you please; or determine the area and draw the figure from the following notes :—

	B C
0	8 4 6
6 4	6 0 0
8 5	4 0 0
5 0	2 0 0
0	0 0 0
	R off B

A B
1 2 5 3
4 8 6 5 2 5 C

Begin at A and go west.

16 Define a straight line, a plane angle, a circle, a segment of a circle, a parallelogram, proportion, reciprocal proportion.

17 The angles which one straight line makes with another upon one side of it are either two right angles, or are together equal to two right angles.

18 Divide a straight line into two parts, so that the rectangle contained by the whole and one of the parts shall be equal to the square of the other part.

19 If two circles cut each other, the straight lines joining their centres will bisect their common chord at right angles.

20 Draw a straight line from a given point, either without or in the circumference, which shall touch a given circle.

21 Inscribe a circle in a given triangle.

22 If the sides of two triangles about each of their angles be proportionals, the triangles shall be equiangular, and have their equal angles opposite to the homologous sides.

ENGLISH GRAMMAR.

Write the following passages in ordinary prose, and explain any peculiarities in the construction:—

This gentle and unforc'd accord of Hamlet
Sits smiling to my heart, in grace whereof
No jocund health that Denmark drinks to day
But the great cannon to the clouds shall tell,
And the king's rouse the heaven shall bruit again
Re-speaking earthly thunder.

King. I must not hear thee; fare thee well, kind maid,
Thy pains not us'd must by thyself be paid;
Proffers not took reap thanks for their reward.

Helena. Inspired merit so by breath is barred;
It is not so with him that all things knows,
As 'tis with us that square our guess by shows

But most it is presumption in us, when
The help of heaven we count the act of men.
Dear sir, to my endeavours give consent,
Of heaven not me make an experiment.
I am not an impostor that proclaim
Myself against the level of mine aim;
But know I think and think I know most sure,
My art is not past power nor you past cure.

Hail foreign wonder!
Whom certain these rough shades did never breed,
Unless the goddess that in rural shrine
Dwell'st here with Pan or Sylvan.

HISTORY.

In questions 1 and 6, only (1) *or* (2) are to be answered.

1 State fully the benefits which you consider to have resulted—
  (1) To Europe from the Crusades.
  (2) To England from the Norman Conquest.

2 What were the claims—
  (1) Of Edward III. to the throne of France?
  (2) Of Henry VII., and of James I., to the crown of England?

3 At what periods of English History did the principle of elective monarchy prevail over that of hereditary succession?

4 What were the Petition of Right, Instrument of Government, Act of Uniformity, Act of Settlement, and Act of Navigation?

5 Explain fully the allusions contained in the following passage:—

"After half a century, during which England had been of scarcely more weight in European politics than Venice or Saxony, she at once became the most formidable power in the world; dictated terms of peace to the United Provinces; avenged the common injuries of *Christendom* on the pirates of Barbary; vanquished the

Spaniards by land and sea; seized one of the finest West India Islands; and acquired on the Flemish coast a fortress which consoled the national pride for the loss of Calais."

6 What important constitutional questions were raised—
(1) By the illness of George III.?
(2) By the protracted trial of Warren Hastings?

7 State very briefly the occasions on which *six* of the following battles were fought, and discuss more fully their political results:—
(1) Agincourt, Bannockburn, Culloden, Dettingen, Hastings, Naseby.
(2) Barnet, Jena, Nancy, Pavia, Pultowa, Tewkesbury.

N.B.—*Three* battles are to be selected from each class.

8 What wars were ended by the following peaces:—
Versailles, Bretigni, Westphalia, Utrecht? Give the dates and principal articles of agreement.

9 When did England gain possession of the following places:—
Canada, the Cape of Good Hope, Corfu, Ceylon, and New York? From whom respectively were they taken?

10 Who was the first King of Prussia? Give his former title, and the circumstances which led to its being changed.

11 On what pretext did Charles VIII. of France invade Italy?

12 When was the Spanish power at its height, and what led to its decline?

NATURAL SCIENCE.

1 State the three laws of motion. Are they to be deduced from experiment or from *à priori* principles?

2 Define centre of gravity, and find the centre of gravity of any triangle.

3 Explain some of the methods by which the sphericity of the earth is demonstrated.

4 Describe the transit instrument, and the mode in which accuracy in its position is attained.

5 Explain the terms tropical, anomalistic, and sidereal year, lunar cycle, indiction.
6 Give as accurate an account as you can of lunar eclipses.
7 State Kepler's laws.
8 Explain the general objects of a kalendar, and state the Gregorian rule.
9 Mention any explanations that have been suggested of the origin of solar heat, and the arguments by which they have been supported.
10 Explain the reason why objects reflected in a mirror appear to lie behind it.
11 The laws of reflection and refraction: mention any natural phænomena which are explained by the latter.
12 What would be the optical effect of placing oneself between two mirrors inclined at an angle of 45°?
13 Describe in detail the optical arrangements of any one kind of telescope.
14 Define specific gravity, and explain how, by means of a hydrometer, the specific gravity of a fluid may be ascertained.
15 Find how much lead, whose specific gravity is $11\frac{2}{10}$, will just sink a cubic foot of cork whose specific gravity is ·2 in water; the weight of a cubic foot of water being 1,000 oz.
16 Explain the method of graduating thermometers.
17 Explain the Leyden jar.
18 What is meant by the variation of the needle?
19 What are the principal sedimentary strata?
20 What arguments do Geology and Astronomy furnish in favour of internal heat in the earth?

GEOGRAPHY.

1 Define the following geographical terms, and mention any countries or districts to which they apply:—
Archipelago, Chersonese, Delta, Steppe, Savannah, *Sound*, Fiord, Lagoon.

2 Trace the course of *four* of the following rivers, stating the countries through which they flow, and the principal towns on their banks:—
Danube, Amazon, Oder, Indus, Nile, Dnieper.
3 Where are Behring Straits, the Straits of Babelmandel and Bonifaccio, and the Kattegat?
4 Into how many departments is France divided? Give the names of any you remember, and mention the provinces to which they most nearly correspond respectively.
5 What is the Zollverein?
6 What were the Hanseatic towns, and why so called?
7 Mention the requisites of a good map.
8 Draw a map, either of England and Wales, inserting the county towns and principal seaports, or of Palestine, according to its territorial divisions at the date of our Saviour's birth, indicating the position of the Jewish tribes.
9 Trace the course of the Gulf Stream.
10 Where are the following towns situated:—
Barcelona, Messina, Liege, Mosul, Nantes, Nancy, Dinan, Dinant, Kiev, Coleraine, Vera Cruz and Hyderabad?
11 What are the principal passes of the Alps? Mention any theories which have been held as to the probable route of Hannibal in crossing them, and give your own opinion.
12 Show how the character of a nation may be influenced by its geology and physical geography.

Miscellaneous Competitive Papers.

HISTORY.

A.

1 When, and by whom. was Christianity introduced into Britain?
2 What is the "Salic Law?" Give any instance of its operation.
3 Trace the descent of the Crown, and that of the reigning sovereign, from King George I.

4 "During the 160 years which preceded the union of the Roses, nine kings reigned in England; six of these nine kings were deposed, five lost their lives as well as their crowns:" name the sovereigns referred to.

5 When did the union of the *kingdoms* of England and Scotland take place? How is the Scotch peerage now represented in the House of Lords?

6 A recent historian, speaking of an English sovereign, says, "In certain respects his reign is an era in our history. It began in revolution and a change in the line of descent. It nearly coincides with the commencement of what is termed modern history, as distinguished from the middle ages, and with the memorable events that have led us to make that distinction, especially the consolidation of the great European monarchies." Mention the name of the sovereign referred to, and explain the allusion.

7 What is the meaning of the constitutional maxim, "The King can do no wrong?"

8 Beginning with the Restoration, mention in chronological order the subjects connected with foreign, colonial, or domestic politics which have successively engrossed the largest share of public attention in England.

9 When did Shakespeare live? Mention the names of his historical plays, and the characters introduced in some one of them.

10 State roughly the amount of the national revenue in recent years, and the sources from which it has been principally derived.

11 Mention the names of Grecian and Roman orators, and the subject of any of their speeches.

12 Give the dates and final issue of the Punic wars, and the names of generals who commanded.

13 Under what Roman emperor was Jerusalem destroyed? What contemporary historian has left a narrative of the war?

14 Name the two European states which have most recently come into existence.

15 What causes principally led to the first French revolution?

16 Give a short account of the origin and termination of the Thirty Years' war.

B.

All *the questions should be answered with* dates, *if possible.*

1 Under what circumstances did the Romans first invade Britain? Name the great leaders under whom the conquest was extended and completed. Who was Emperor of Rome when the Romans abandoned the island?

2 Who were the Saxons? In what part of England did they first settle? Who was the first Saxon King of England?

3 What were the chief events in the reign of Stephen? How was he related to William the Conqueror? Who were the father and mother of Henry II.?

4 In the year 1224 there was a war with France; what led to it, and what were the results?

5 Who was "Henry of Windsor?" Whom did he marry, and where did he die?

6 Name the principal statesmen and writers of the age of Queen Elizabeth; and give as complete an account as you can of any *one* of them.

7 What was the Triple Alliance in the reign of Charles II? How did the king act in carrying out its provisions?

8 What circumstances led William III. to contemplate the resignation of his crown?

9 In 1755 a war broke out with France; what is this war called in history? Describe its origin, and its first operations and results.

10 State very briefly the occasions on which the following battles were fought: Tewkesbury, Bunker's Hill, Corunna, Oudenarde, Plassy, St. Vincent.

ARITHMETIC.

1 Reduce 344612 ounces avoirdupois to cwts., quarters, &c., and 13 lbs. 9 oz. 15 dwts. 13 grains troy, to grains.

2 How many feet are there in 5 miles, 3 furlongs, 4 poles, 3 yards?

3 The side of a cube is 17 inches: find its content in solid yards, feet and inches.

4 The sides of a rectangular plot are 57 ft. 5 in. and 43 ft. 5 in.: find its area in square yards, feet and inches.

5 If A invests 33,075*l.* in the purchase of 3*l.* per cent. at 87½, and B invests the same sum in the purchase of 4*l.* per per cent. at 94½, what will be the difference in their net incomes, after deducting income tax at 16*d.* in the pound?

6 If $\frac{3}{15}$ of a cwt. be worth 7*l.* 3*s.*, what will be the value of $\frac{6}{11}$ of a ton?

7 If the shares of a railway are at 76½ when consols are at 93½, what would be their price when consols are at 89¼?

8 Find by the method of "Practice:"

(a) The price of 9 tons, 11 cwt. 2 qrs. 21 lbs. at 10*l.* 11*s.* 4*d.* per cwt.

(b) The price of 17 acres, 3 roods, 15 poles, at 60*l.* 3*s.* 4*d.* per acre.

9 If 780 men on full rations consume 221 quarters of wheat in 119 days, how many on half rations will consume 437 quarters in 57 days?

[Explain the method by which you proceed.]

10 If 10 lbs. 3 oz. of tea at 4*s.* 8*d.* per pound be mixed with 23 lbs. 3 oz. at 5*s.* 4*d.*, and 17 lbs. 11 oz. at 6*s.* 8*d.*, and the mixture be sold at 6*s.* 1*d.* per pound, what will be the gain or loss; and what the gain or loss per cent. on the cost price?

11 Find the interest at 4¾ per cent. on 924*l.* 12*s.* 8*d.* lent on the 18th of March, and repaid on the 11th of August, the former day being excluded and the latter included.

12 What principal, lent at 3½ per cent. simple interest, will amount in 5 years to 1,884*l.* 19*s.* 10½*d*?

13 What will be the amount of 825*l.* at the end of 2 years, at 4*l.* per cent. per annum compound interest accruing, due half yearly?

14 Reduce to their simplest forms the expressions—

(a) $\frac{1}{7} + \frac{3}{11} + \frac{17}{13} - \frac{581}{1001}$.

(b) $\frac{2}{11}$ of $6\frac{10}{13}$ of 14 $\frac{3}{10}$ divided by $\frac{1}{17}$ of $299\frac{1}{2}$.

(c) $\frac{2}{7}$ of a pound + $\frac{47}{147}$ of a guinea + $\frac{211}{840}$ of 6*s.* 8*d.* + $\frac{5}{63}$ of a crown.

15 Explain the rules for the multiplication and division of decimals—

Divide ·015 by ·00005, and 313·24 by 24997·5; showing in the latter case the whole of the circulating *portion.*

16 Express ·378216 as a vulgar fraction in its lowest terms.

17 Express 7*s.* 10½*d.* as the decimal of a pound, and find the value of ·03234 of a guinea.

18 Extract the square root of 49660209; also that of 7·0032 to four places of decimals.

19 Find by any rule with which you are acquainted the sum which paid one year hence will be an equivalent for 200*l.* due now and 600*l.* due at the end of two years, the rate of interest being 5*l.* per cent.

20 Reduce to their simplest form the expressions,—

(*a*) $\dfrac{\dfrac{x+y}{x-y}+\dfrac{x-y}{x+y}}{\dfrac{x+y}{x-y}-\dfrac{x-y}{x+y}}$

(*b*) $(x-3y)(x+y)-(x-2y)(x+3y)+(x-y)(x+5y)-x^2+2y^2$.

21 Find the greatest common measure of $x^4+x^3y-2x^2y^2+xy^3-y^4$, and $x^3-6x^2y\ 11xy^2-6y^3$.

22 Write down the expansion of $(x+y)^6$. How many terms are there in the expansion of $(x+y)^{100}$?

23 Extract the square roots of $14+6\sqrt{5}$ and $1+4\sqrt{-3}$.

24 Solve the equations—

(*a*) $\dfrac{x-2}{11}+\dfrac{3x-22}{17}+\dfrac{x-3}{5}=4.$

(*b*) $\begin{cases} x+13y-\dfrac{8x-12y}{5}=29. \\ 7x-2y-\dfrac{2x-y}{4}=16. \end{cases}$

(*c*) $3x^2-\dfrac{x}{7}=146.$

(*d*) $2x^2+3x+\sqrt{2x^2+3x+16}=74.$

25 A traveller sets out to walk from A to B at 4 miles an hour. One hour later another traveller sets out from B towards A at 3½ miles an hour; when they meet the first has walked 6 miles more than the second. Find the distance from A to B.

26 Sum the Arithmetical Progression $1+5+9+\ldots$ to 15 terms; and the Geometric Progression $1+\frac{1}{5}+\frac{1}{25}+\ldots$ to n terms and *ad infinitum*.

ADDITION.

£	s.	d.		£	s.	d.
			Brought forward			
134	6	6		1018	16	$2\frac{3}{4}$
232	1	$11\frac{1}{4}$		691	13	$3\frac{3}{4}$
1067	17	$9\frac{1}{2}$		1414	12	4
4032	12	1		3003	9	$2\frac{1}{2}$
6149	13	$2\frac{1}{2}$		8756	14	$9\frac{1}{2}$
2347	15	$6\frac{3}{4}$		56	4	$10\frac{3}{4}$
1279	8	$7\frac{1}{2}$		616	3	$7\frac{1}{2}$
6401	3	$2\frac{1}{4}$		1189	2	$3\frac{3}{4}$
752	15	$3\frac{1}{2}$		401	3	$6\frac{1}{2}$
1778	3	$10\frac{1}{2}$		7116	15	$7\frac{3}{4}$
4436	13	$11\frac{1}{2}$		106	13	6
5016	18	2		1211	6	$7\frac{1}{2}$
631	7	$7\frac{1}{4}$		3144	18	9
46	3	$6\frac{3}{4}$		4135	11	$10\frac{3}{4}$
1287	14	$7\frac{1}{2}$		163	9	$11\frac{1}{2}$
5036	12	$1\frac{1}{2}$		9016	10	$3\frac{1}{2}$
147	0	$6\frac{3}{4}$		6140	7	$8\frac{3}{4}$
360	5	5		109	19	10
1379	17	$2\frac{3}{4}$		4321	18	$9\frac{1}{2}$
9	9	$10\frac{1}{2}$		31064	17	$9\frac{3}{4}$
1340	16	$9\frac{1}{4}$		5641	12	8
906	10	$7\frac{1}{2}$		732	0	0
4444	11	2		8146	11	$9\frac{1}{2}$
211	6	8		1140	15	$6\frac{3}{4}$
7743	13	$3\frac{1}{4}$		6678	13	$6\frac{1}{2}$
9671	11	$9\frac{1}{2}$		7709	14	$7\frac{3}{4}$
14376	15	$10\frac{1}{4}$		5618	15	$5\frac{1}{2}$
2371	11	9		7731	11	$11\frac{1}{2}$
1473	6	$8\frac{1}{2}$		6549	3	$3\frac{3}{4}$
1358	7	$9\frac{3}{4}$		7530	4	$4\frac{1}{2}$
6408	13	$10\frac{1}{2}$		5811	5	$5\frac{3}{4}$
1481	15	$1\frac{1}{2}$		756	2	$2\frac{1}{2}$
016	13	$2\frac{3}{4}$		13	3	$9\frac{1}{4}$
40168	15	$3\frac{1}{2}$				
Carried forward			Total ...			

It is important the addition should be quite correct.

ADDITION.

£	s.	d.		£	s.	d.
			Brought forward			
1 3 4	6	6		1 0 1 8	16	$2\frac{3}{4}$
2 3 2	1	$11\frac{1}{4}$		6 9 1	13	$3\frac{3}{4}$
1 0 6 7	17	$9\frac{1}{2}$		1 4 1 4	12	4
4 0 3 2	12	1		3 0 0 3	9	$2\frac{1}{2}$
6 1 4 9	13	$2\frac{1}{2}$		8 7 5 6	14	$9\frac{1}{2}$
2 3 4 7	15	$6\frac{3}{4}$		5 6	4	$10\frac{3}{4}$
1 2 7 9	8	$7\frac{1}{2}$		6 1 6	3	$7\frac{1}{2}$
6 4 0 1	3	$2\frac{1}{4}$		1 1 8 9	2	$3\frac{3}{4}$
7 5 2	15	$3\frac{1}{2}$		4 0 1	3	$6\frac{1}{2}$
2 4 6 3	1	$2\frac{1}{2}$		7 1 1 6	15	$7\frac{3}{4}$
6 4 7 1	2	$3\frac{1}{4}$		1 0 6	13	6
5 0 1 6	18	2		1 2 1 1	6	$7\frac{1}{2}$
6 3 1	7	$7\frac{1}{4}$		3 1 4 4	18	$9\frac{1}{2}$
4 6	3	$6\frac{3}{4}$		4 1 3 5	11	$10\frac{3}{4}$
1 2 8 7	14	$7\frac{1}{2}$		1 6 3	9	$11\frac{1}{2}$
5 0 3 6	12	$1\frac{1}{2}$		9 0 1 6	10	$3\frac{1}{2}$
1 4 7	0	$6\frac{3}{4}$		6 1 4 0	7	$8\frac{3}{4}$
3 6 0	5	5		1 0 9	19	10
1 3 7 9	17	$2\frac{3}{4}$		4 3 2 1	18	$9\frac{1}{2}$
9	9	$10\frac{1}{2}$		4 0 0 7 1	8	7
1 3 4 0	16	$9\frac{1}{4}$		3 4 1 2	7	$4\frac{1}{2}$
9 0 6	10	$7\frac{1}{2}$		7 3 2	0	0
4 4 4 4	11	2		8 1 4 6	11	$9\frac{1}{2}$
2 1 1	6	8		1 1 4 0	15	$6\frac{3}{4}$
7 7 4 3	13	$3\frac{1}{4}$		6 6 7 8	13	$6\frac{1}{2}$
9 6 7 1	11	$9\frac{1}{2}$		7 7 0 9	14	$7\frac{3}{4}$
1 4 3 7 6	15	$10\frac{1}{4}$		5 6 1 8	15	$5\frac{1}{2}$
2 3 7 1	11	9		7 7 3 1	11	$11\frac{1}{2}$
1 4 7 3	6	$8\frac{1}{2}$		6 5 4 9	3	$3\frac{3}{4}$
1 3 5 8	7	$9\frac{3}{4}$		7 5 3 0	4	$4\frac{1}{2}$
6 4 0 8	13	$10\frac{1}{2}$		5 8 1 1	5	$5\frac{3}{4}$
1 0 6	2	2		7 5 6	2	$2\frac{1}{2}$
2 7 5 9	11	$8\frac{1}{4}$		1 3	3	$9\frac{3}{4}$
4 0 1 6 8	15	$3\frac{1}{2}$				
Carried forward			Total			

It is important the addition should be quite correct.

WEIGHTS AND MEASURES.

1 Write out the tables of—
Avoirdupois weight.
Troy weight.
Long measure.
Cloth measure.
Wine measure.
Dry measure.

2 In miles, furlongs, poles, yards, how many feet?

3 In lbs. avoirdupois weight, how many tons, cwts., and qrs.?

4 In lbs., oz., dwts., grs., troy weight, how many grains?

5 In a table, the sides of which are ft. in., and ft. in., how many square yards, feet, and inches?

PART IV.

Departmental Examination Papers, previous to the Order in Council.

WAR OFFICE.

ENGLISH GRAMMAR AND COMPOSITION.

1 Accent each of the following words in two ways, and construct sentences which shall contain these words:—refuse, desert, protest, compound.

2 Correct, if necessary, the spelling of the following words, and give the reasons for your corrections:—moveable, truely, skillful, blisful, lodgement.

3 Correct, if necessary, the following, and give the reasons for your corrections:—

Divide this among the two.
The man has come, him who you saw.
These books are their's, those are your's.
The captain with his men, were taken.
We laid our money upon camels, concealed in bales of cheap goods, and travelled to the shores of the Red Sea.

4 Distinguish between the following words and modes of expression:—acquittal and acquittance, attendance and attention, beside and besides, in course and of course.

5 Put the following sentence into plainer and more modern language:—"Alcidamas, the sorcerer, hath many notable arguments to prove that voluntary and extemporal far excelleth premeditated speech."

6 What historical events have influenced the composition of the English language? Name the chief writers of the reigns of Anne and George I.

7 Give the derivations of book, protect, adjacent, encamp, projectile, Dublin, Exeter.
8 Put the proper stops to the following passage and explain it:—"For a man to write well there are required three necessaries to reade the best authors observe the best speakers and much exercise of his owne style."
9 Write the following passage in prose, and parse the words in the first and second lines:—

"High on a throne of royal state, which far
Outshone the wealth of Ormus and of Ind,
Or where the gorgeous East with richest hand
Showers on her kings barbaric pearl and gold,
Satan exalted sat."

ENGLISH HISTORY AND BRITISH CONSTITUTION.

1 At what period, and under what circumstances, did the Saxons become masters of a large part of Britain?
2 Describe the most important of the Saxon institutions.
3 Name the sovereigns of the house of Stuart, and specify the principal events in the reign of James II.
4 Trace the causes which led to the quarrel between Charles I. and his parliament.
5 Describe the "Act of Settlement," and also the "Habeas Corpus Act."
6 Mention any of the principal writers upon the English constitution, and name their works.
7 Can you name any eminent foreign writers on jurisprudence, international law, or upon any of the following subjects, viz., history, science, natural history?

GEOGRAPHY.

1 Give proofs of the earth's rotundity.
2 Name the rivers upon which the following cities and towns are situated, Paris, &c. &c.

3 Name the chief commercial ports of Great Britain.
4 Describe the rivers which drain the eastern districts of England.
5 Mention the exports from the Mediterranean, and the countries from which they respectively come.
6 In what countries are the following cities and towns situated, and for what are they respectively noted?—Liege, Ipswich, Hamburg, Bordeaux, Odessa, Belfast, Glasgow, and Axminster.
7 Describe the county of Middlesex in the following order:—1. Aspect; 2. Rivers; 3. Market towns; 4. Manufactures, trade, agriculture.
8 Whence do we obtain hides, cochineal, figs, cotton, sulphur, oil and timber?
9 Describe the physical features, climate and productions of Holland, Turkey, or Denmark.
10 Name the foreign possessions and dependencies of Great Britain in Europe.
11 What are the naval stations of England, France and Russia?
12 Assign to their respective counties the following cities or towns:—Exeter, Ramsgate, Carlisle, Leeds, Dublin, Nottingham, Paisley and Winchester.
13 Name the towns in which the following manufactures, &c., are carried on in England:—Machinery, carpets, silks, nails, boots and shoes, and hosiery.
14 State what books on the foregoing subjects, or any standard works in general literature, you have read.

ARITHMETIC.

1 Define the following terms:—Quotient, ratio, fraction, proportion, multiple.
2 Divide 675*l.* 18*s.* 7*d.* by $35\frac{3}{4}$.
3 What sum of money will be required, per week of 7 days, to pay 8 companies, each consisting of 95 men, at 1*s.* $1\frac{1}{2}$*d.* a day for each man?
4 What is the cost of 3 cwt. 3 qrs. 3 lbs. of beef, at $4\frac{5}{16}$*d.* a lb.?
5 If gunpowder cost 4*l.* 18*s.* 6*d.* a cwt., what is the value of 14 cwt. 2 qrs. 7 lbs.?

6 What is the simple interest of 675*l.* 18*s.* 0*d.* for 5 years, at $3\frac{1}{2}$ per cent. per annum?

7 Find by practice the value of 4 cwt. 2 qrs. 6 lbs. at 3*l.* 5*s.* 6*d.* a cwt.

8 What ought a loaf to weigh when wheat is at 4*s.* a bushel, if, when at 5*s.* 3*d.* a bushel, it weighs 2 lbs. 8 ozs.?

9 Add together $\frac{5}{6}$ of 3 guineas, $\frac{3}{4}$ of 5*s.* 6*d.*, and $\frac{1}{2}$ of $\frac{5}{6}$ of 5*d.*

10 Required the value of ·8756 of a pound sterling.

11 What decimal of 8*s.* 5*d.* is 8*s.* 4*d.*?

12 The population of a place at one period was 4,780; at another period 5,002. Required the increase per cent.

13. If a person's estate be worth 1,384*l.* 16*s.* 0*d.* a year, and the land tax be assessed at 2*s.* $9\frac{1}{2}$*d.* in the pound, what is his annual net income?

14 Simplify $\frac{1\frac{3}{4} - \frac{7}{8} \text{ of } \frac{1}{2}\frac{3}{8}}{\frac{5}{6} \text{ of } \frac{1}{2}\frac{2}{5} + 5\frac{1}{2}}$, and reduce the result to a decimal.

15 At what rate per cent. will 325*l.* 16*s.* 8*d.* amount to 374*l.* 6*s.* $0\frac{1}{4}$*d.* in $3\frac{1}{2}$ years at simple interest?

ADMIRALTY.

HISTORY AND GEOGRAPHY.

1 Give an account of Edward I. both before and after he ascended the throne.

2 Give a sketch of the life and writings of Wyckliffe, and give some account of the sect of which he was the founder.

3 For what reasons is it important to remember the following reigns:—Egbert, Alfred, William I., Edward I., Henry VIII., Charles I., and William III.?

4 Give an outline of the History of the English Parliament.

5 Where are the following places, and for what are they remarkable:—Archangel, Christiania, Palermo, Rhodes, Medina, Barcelona, Agra, Surinam, Montevideo, San Francisco. Preston, and Montreal?

6 Enumerate the volcanos of Europe and America, and give some account of the most remarkable eruptions of each.

7 What do you mean by the temperate, frigid, and torrid zones? State their extent, climate, productions, and inhabitants respectively. Are their limits arbitrary, and, if not, determined by what physical circumstances?

ARITHMETIC.

1 Add

£	*s.*	*d.*
1367	15	$6\frac{1}{4}$
346	19	$1\frac{1}{2}$
84	13	$4\frac{1}{2}$
56	15	$8\frac{1}{4}$
146	18	$1\frac{1}{2}$
85	15	$6\frac{1}{2}$

2

	tons.	*cwt.*	*qrs.*	*lbs.*
From	876	11	1	23
Take	487	15	3	26

3 Multiply 3,467*l.* 5*s.* $7\frac{1}{2}$*d.* by 346.

4 Divide 2,665 miles 2 furl. 31 poles $\frac{1}{2}$ yard by 58.

5 A train is travelling at the rate of $32\frac{1}{2}$ miles per hour; over how many feet does it pass per second.

6 If 84 men can do a piece of work in two months, how long will it take 12 men to do the same?

7 If the carriage of 18 tons 13 cwt. 3 qrs. 14 lbs. cost 18*s.* $7\frac{3}{4}$*d.*, what will be the cost of carriage of 256 tons 19 cwt. 2 qrs. 26 lbs.?

8 What fraction of a £ is 7*s.* $8\frac{1}{2}$*d.*

9 What is the value of $\dfrac{\frac{2}{5} \text{ of } 5\frac{3}{4} \quad - \frac{3}{8} \text{ of } 4\frac{1}{4}}{\frac{7}{8} \text{ of } \frac{3}{7} \text{ of } 5\frac{1}{4} - \frac{5}{8} \text{ of } \frac{4}{15} \text{ of } 3\frac{2}{3}}$

10 Find by practice the value of 1,389 tons of coal at 1*l.* 13*s.* 8*d.* per ton.

11 What decimal of a pound troy is 16 dwts?

12 What are the value of ·346 of a pound sterling, and of ·058 of a year?
13 Multiply 32·47 by ·0033.
14 Divide 1·0226816 by ·0436.
15 What sum placed out at interest at 4 per cent. would amount to 580*l.* in 3 years, (1) allowing simple (2) compound interest.
16 Divide 350,496*l.* among 4 persons in the proportion of 3, 7, 9, and 11.
17 A sum of 250*l.* 17*s.* 6*d.* is transmitted through Paris to New York. One sovereign English is worth 24 francs 79 cent. at Paris, and 6 francs 20 cent. French are worth 2 dollars 25 cents American. What is the value of the sum at New York in American currency?

INLAND REVENUE.

GEOGRAPHY.

Where is St. Helena?
Name some principal sea-ports in Spain and Portugal.
Which are the principal manufacturing districts in England?
Into how many zones is the earth divided for the purposes of geography?
Where is California?
Name the Channel Islands, and state why they are so called.
What is the meaning of the word "Antipodes" in Geography?
What are the principal sea-ports of France?
What are the names of the most southerly points of Africa and America?
Name half a dozen of the United States.
Where is Sierra Leone, and what is its principal characteristic?
Where is Berwick-upon-Tweed, and for what circumstance is it noticeable?

HISTORY.

Which of the English kings reigned for the longest period?
Who succeeded James II., and how did he acquire the crown?

Name some English statesman of eminence in the reign of George II.

What is the Habeas Corpus Act?

Name half a dozen celebrated English admirals.

What is the nature of the office termed "Premier"?

Who succeeded Richard III., and how did he acquire the crown?

Who was John Hampden, and what has rendered him famous?

Name the king who divided England into counties.

In whose reign did the United States cease to be a portion of the British dominions, and how did they acquire their independence?

What was the effect of the corn laws, and what was the effect of their repeal?

Name the great civil wars which have taken place in England, and the causes of any one of them.

What is the meaning of the term "Catholic Emancipation?"

ARITHMETIC.

There are 2,179 hackney carriages in London, which earn on an average 14*s.* a day each: what is the gross amount expended on these vehicles in a year?

Assuming that 32 bricks will make 9 square feet of pavement, how many will be required to pave a yard 63 feet long by 36 feet wide?

How much time in the course of 33 years will a person who rises at 5 o'clock in the morning gain over another who rises at 8 o'clock, supposing both to go to bed at 10 o'clock at night, and computing $365\frac{1}{4}$ days to the year?

If a penny loaf weighs 4 ozs. when flour is 4*s.* the peck, what should it weigh when flour is 5*s.* 4*d.* the peck?

What is the duty on 85,960lbs. of hops at 1*d* $\frac{1}{2}\frac{2}{0}$ of one farthing per lb. (by practice).

Add together $\frac{9}{10}$, $\frac{5}{7}$, and $\frac{4}{9}$.

Subtract $\frac{3}{10}$ from $\frac{8}{11}$.

Multiply $\frac{3}{10}$ by $\frac{8}{11}$.

Reduce $\frac{9}{3\frac{2}{0}}$ to a decimal.

Add sixty and three thousandths to thirty-three and sixty-five hundred thousandths.

Subtract the less from the greater.

Find their product.

Divide the greater number by the less.

BOOK-KEEPING.

Specimen of Waste Book given to candidate to be journalized and posted into Ledger.

London, 1st January, 1846.

List of the Effects of Richard Randall.	£	s.	d.
Cash in hand	1,000	0	0
Bills receivable:			
No. 200. John Wright, due 6th February £200 0 0			
„ 201. Joseph Strong, due 9th February 187 10 0			
	387	10	0
Wine:			
Port, 57 pipes at £60 ... 3,420 0 0			
Sherry, 37 hogsheads at £40 1,480 0 0			
	4,900	0	0
Paper, 77 reams at 17*s.*	65	9	0
Cloth, 500 yards at 20*s.*	500	0	0
	6,852	19	0

1st.

List of liabilities.

To George Williams, Cheapside	350	0	0
To William Jones, Bishopsgate-street ...	100	0	0

2nd.

Sold for cash 2 pipes port wine at 75*l.* per pipe...	150	0	0

2.

Exchanged 3 hogsheads sherry at 40*l.* for 100 yards cloth at 24*s.* per yard	120	0	0

		£	s.	d.
3.				
Sold for cash 7 yards cloth at 25*s.* 6*d.* per yard ...		8	18	6
8.				
Bought for cash 58 reams paper at 22*s.* 6*d.* per ream		65	5	0
Bought of Anthony Alexander,				
2 pipes port wine at 53*l.* 10*s.* - -	£107 0 0			
7 hogsheads sherry at 44*l.* - -	308 0 0			
		415	0	0
8.				
Paid carriage of wine		0	15	0
14.				
Bought of G. Williams 70 yards of cloth at 18*s.* ...		63	0	0
14.				
Paid G. Williams, cash on account		100	0	0
21.				
Sold for cash 15 reams of paper at 20*s.*		15	0	0
28.				
Sold for cash 10 pipes of port wine at 65*l.* per pipe...		650	0	0
30.				
Sold David Archer 14 reams of paper at 20*s.* ...		14	0	0
30.				
Paper damaged, 2 reams at 17*s.*		1	14	0

AUDIT OFFICE.

A.

Practice.

56 tons 4 cwt. 2 qrs. at 58*l.* 7*s.* 6*d.* per ton.
38 cwt. 1 qr. 16 lbs. at 2*l.* 12*s.* 6*d.* per cwt.
2,654$\frac{3}{4}$ at 7*l.* 15*s.* 4*d.* each.
7,394$\frac{1}{4}$ at 12*l.* 8*s.* 8$\frac{1}{2}$*d.*
3,875 at 8*l.* 18*s.* 6$\frac{3}{4}$*d.*

Rule of Three.

3 cwt. cost 11*l.* 1*s.* 3*d.*, what will be the cost of 16 cwt. 1 qr. 21 lbs.?

If 3 cwt. 13 lbs. cost 14*l.* 2*s.* 9*d.*, what will 7 cwt. 2 qrs. 25 lbs. cost?

If 3,875 cwt. cost 34,596*l.* 9*s.* 8½*d.*, what will 1 cwt. cost?

If 124 tons 16 cwt. 2 qrs. 16 lbs. cost 1,613*l.* 19*s.* 6*d.*, what will 2 tons cost?

Interest.

What is the interest of 945*l.* 10*s.* at 4 per cent. per annum?

What is the interest on 576*l.* 2*s.* 7*d.* at 4½ per cent. for 7¼ years?

What is the interest on 279*l.* 13*s.* 8*d.* at 5¼ per cent. for 3½ years?

What is the interest on 1,797*l.* 14*s.* 0*d.* at 4⅜ per cent. per annum?

Vulgar Fractions.

What is the value of $\frac{6}{8}$ of a £?

Reduce 3*s.* 6*d.* to the fraction of a £.

Reduce ½, ¾, and ⅝ to a common denominator.

Add ⅕, 4⅓, and ⅔ together.

Decimals.

Reduce ⅝ to a decimal.

Reduce 6*d.* to the decimal of a £.

Reduce 7*s.* 6*d.* to the decimal of a £.

Multiply 3·76 by ·23.

What is the value in money of ·25 of a £?

What is the value in money of ·68125 of a £?

What is the value in money of ·025 of a £?

What is the value in money of ·3333 of a £?

B.

Rule of Three.

If 6744½ cwt. cost 64030*l.* 11*s.* 11¼*d.*, what will 1 cwt. cost?

If 33 cwt. 2 qrs. 8 lbs. cost 1315*l.* 8*s.* 9¾*d.*, what will 3½ cwt. cost?

If 4365¾ cost 50624*l.* 10*s.* 2¼*d.*, what will 1 cwt. cost?

Practice.

56 tons 4 cwt. 2 qrs. at 58*l.* 7*s.* 6*d.* per ton.

38 tons 1 cwt. 16 qrs. at 2*l.* 12*s.* 6*d.* per cwt.
37 tons 3 cwt. 22 qrs. at 12*l.* 11*s.* 7*d.* per cwt.
7394$\frac{3}{4}$ at 12*l.* 8*s.* 8$\frac{1}{2}$*d.* each.
4562$\frac{1}{4}$ at 3*l.* 15*s.* 9$\frac{1}{2}$*d.* each.
16 cwt. 1 qr. 21 lbs. at 3*l.* 13*s.* 9*d.* per cwt.

Interest.

What is the interest of 576*l.* 2*s.* 7*d.* at 4$\frac{1}{2}$ per cent. per annum for 7$\frac{1}{2}$ years?
What is the interest of 268*l.* for one year at 4 per cent. per annum?

Vulgar Fractions.

Reduce $\frac{2}{3}$, $\frac{5}{4}$, and $\frac{3}{4}$ to a common denominator.
Add $\frac{2}{3}$ and $\frac{5}{7}$ together.

Decimals.

What is the value of ·75 of a £?
What is the value of ·65 of a £?
Add 72·5, 32·071, 2·1574, 371·4, 2·75 together.
Reduce $\frac{1}{2}$ to a decimal.
Reduce 6*d.* to the decimal of a £.
Reduce 9*s.* 7*d.* to the decimal of a £.

C.

Rule of Three.

If 124 tons 16 cwt. 2 qrs. 16 lbs. cost 1613*l.* 19*s.* 6*d.*, what will 2 tons cost?
If 3875 cwt. cost 34,596*l.* 9*s.* 8$\frac{1}{4}$*d.*, what will 1 cwt. cost?
37 cwt. 3 qrs. 22 lbs. cost 477*l.* 6*s.* 8*d.*, what will 1 cwt. cost?

Practice.

38 cwt. 1 qr. 16 lbs. at 2*l.* 12*s.* 6*d.* per cwt.
16 cwt. 1 qr. 21 lbs. at 3*l.* 13*s.* 9*d.* per cwt.
5 tons 3 cwt. 1 qr. 5 lbs. at 3*l.* 13*s.* per cwt.

Interest.

945*l.* 10*s.* 0*d.* at 4*l.* per cent. per annum.
576*l.* 2*s.* 7*d.* at 4½ per cent. per annum for 7¼ years.

Fractions.

Reduce 3*s.* 6*d.* to the fraction of a £.
Reduce 6¼*d.* to the fraction of a £.
Add $\frac{1}{5}$, $4\frac{1}{3}$, $\frac{2}{5}$.
Find the common denominator of $\frac{3}{16}$, $\frac{8}{21}$, $\frac{5}{9}$, and $5\frac{1}{7}$.
Find the value of $\frac{6}{8}$ of a £.

Decimals.

Reduce $\frac{5}{8}$ to a decimal.
Reduce 6*d.* to a decimal of a £.
Reduce $\frac{1}{4}$ to a decimal.
Reduce 9*s.* 7*d.* to a decimal of a £.
Add 74·36, 5·473, ·9872, 340·03, and 5984.
Add 72·5, 2·1574, 371·4, and 2·75.
Multiply 75·6 by ·3796.
Divide 84·6 by 3·9874.

CUSTOMS.

1 Find the value of 353 cwt. 2 qrs. 7 lbs. of sugar at 17*s.* 4*d.* per cwt.
2 Calculate the duty on 753 lbs. of tea at 2*s.* 1*d.* per lb., with 5 per cent. additional.
3 Calculate the duty at 15*l.* per cent. on goods valued at 963*l.* 15*s.*
4 Add together $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$, and $\frac{7}{9}$.
5 Add together $\frac{2}{7}$ of 18, and $\frac{3}{5}$ of $\frac{4}{21}$.
6 Subtract $2\frac{5}{8}$ from $3\frac{3}{4}$.
7 Divide $\frac{2}{5}$ by $\frac{3}{7}$, and multiply the product by $\frac{2}{3}$.
8 Add together 1·3046, 15·031, ·0082, and 3·29.
9 Multiply 4·41 by 33·21.

10 Divide 2·5 by ·32.
11 Divide 9·065 by ·049.

CASE I.

1st Examination.

1 Calculate the duty on 356 cwt. 3 qrs. 16 lbs. of foreign white clayed sugar at 12*s.* 10*d.* per cwt.
2 Ditto at 15*l.* per cent. on goods valued at 963*l.* 15*s.*
3 Add together $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{6}$ and $\frac{7}{9}$.
4 Divide $\frac{2}{5}$ by $\frac{3}{7}$ and multiply the product by $\frac{2}{3}$.
5 Multiply 22·5 by 32·16.
6 Divide 3·24 by ·25.
7 Add together ·0204*l.*, 13·26*l.*, and ·003*l.*, and find the value of the same.

2nd Examination.

1 Add together $1\frac{3}{8}$, $\frac{1}{6}$, $\frac{5}{18}$ and $2\frac{1}{12}$.
2 Subtract $\frac{3}{4}$ from $1\frac{4}{25}$.
3 Divide $\frac{3}{5}$ of $\frac{8}{9}$ by $\frac{6}{7}$ of $\frac{3}{4}$.
4 Multiply 4·41 by 33·21.
5 Add together 1·3046*l.*, 15·031*l.*, 0082*l.*, and 3·29*l.*, and find the value of the sum.
6 Divide 2·5 by ·32.

Examination after Probation.

	Cwt.	*qrs.*	*lbs.*
Add together—	35	3	14
	26	1	11
	15	2	22
	167	0	15
	19	1	1
	265	3	3
	88	2	14
	63	3	5
	77	2	9

Multiply 15*l.* 15*s.* 9*d.* by 35.
Add $\frac{5}{9}$, $\frac{3}{4}$, $\frac{2}{3}$.
Multiply $\frac{3}{8}$ by $\frac{3}{9}$.
Multiply 367·54 by 69·3.
Divide 316·21 by 4·7.
If 10 yards cost 2*l.* 16*s.* 8*d.*, what will 3 yards cost?

Case II.

1st Examination.

1 Find the value of 7 cwts. 3 qrs. 11 lbs. at 2*l.* 13*s.* 1*d.* per quarter.
2 Calculate the duty on 753 lbs. of tea at 2*s.* 1*d.* per lb., with 5 per cent. additional.
3 Ditto at 15 per cent. on goods valued at 963*l.* 15*s.*
4 Add together $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$ and $\frac{7}{9}$.
5 Add together $\frac{2}{7}$ of 18, and $\frac{3}{5}$ of $1\frac{4}{21}$.
6 Divide $\frac{3}{5}$ of $\frac{8}{9}$ by $\frac{6}{7}$ of $\frac{3}{4}$.
7 Divide $\frac{2}{5}$ by $\frac{3}{7}$, and multiply the product by $\frac{2}{3}$.
8 Add together 1·3046, 15·031, ·0082 and 3·29.
9 Add together ·0204*l.*, 1·326*l.*, and ·003*l.*, and find the value of the sum.
10 Divide 9065 by ·049.
11 Divide 2·5 by ·32.

Examination after Probation.

345 tuns 2 hhd. 42 gall. at 45*l.* 10*s.* per tun.
3796 cwt. 3 qrs. 24 lbs. at 1*l.* 13*s.* 3*d.* per cwt.
17,646,391 lbs. at 7½*d.* per lb.
51,684 load 41 feet at 2*l.* 15*s.* per load (with currency).
1 fathom 21 feet at 6*s.* 6*d.* per fathom (216 feet).
8 gt. hundred, 3 qrs 14 at 1*l.* 5*s.* per gt. hundred.
95 fathoms 105 feet at 19*s.* per fathom (216 feet).

Add $3541\frac{3}{8}$
$562\frac{1}{12}$
$951\frac{3}{32}$
$1740\frac{5}{48}$
$1893\frac{1}{16}$

Add and find the value in £ *s. d.*

1·521
·675
·145
3·184

CASE III.

1st Examination.

No. 1 Find the value of 7 cwt. 3 qrs. 11 lbs. at 2*l.* 13*s.* 1*d.* per quarter.
2 Add together $1\frac{3}{6}$, $\frac{1}{6}$, $\frac{5}{18}$, $2\frac{1}{12}$.
3 Divide $\frac{1}{6}$ of $\frac{3}{5}$ by $\frac{1}{2}$.
4 Add together 1·3046*l.*; 15·031*l.*; ·0082*l.*; 3·29*l.*, and find the value of the sum.
5 Multiply 33·21 by 4·41.
6 Divide 2·5 by ·32.

Examination after Probation.

50 bags sweet almonds 33 cwt. 2 qrs. 18 lbs. gross. Tare 2lbs. each bag and $\frac{2}{3}$rds allowed for shell; what is the net weight for duty?

5 butts
3 canotals } Currants.
10 boxes raisins.

		cwt.	*qrs.*	*lbs.*	
J.D.	1	17	2	9	Tare at 18 per cent., what is the net weight?
	2	18	2	14	
	3	19	3	0	
	4	20	1	0	
	5	16	3	26	
5 butts		93	0	21	

	cwt.	*qrs.*	*lbs.*	
F.B. 1	7	2	19	
2	6	3	21	Tare at 17 per cent., what is the net weight?
3	7	0	14	
3	21	2	26	

Raisins.

Boxes.	*cwt.*	*qrs.*	*lbs.*	
C.L. 5	2	1	24	
5	2	2	1	Tare 6lbs. each, what is the net weight?
10	4	3	25	

Fractions.	*Decimals.*
Add $\frac{3}{4} \times \frac{5}{8} \times \frac{2}{3}$.	Multiply 19·378 by 19·38.
Multiply $\frac{3}{4} \times \frac{7}{8}$	Divide 3·24 by ·25
Divide $\frac{4}{3} \div \frac{5}{6}$	

Case iv.

1*st Examination.*

1 Find the value of 7 cwt. 3 qrs. 11 lbs. at 2*l.* 13*s.* 1*d.* per quarter.
2 What is the duty on 353 cwt. 2 qrs. 7 lbs. of sugar at 17*s.* 4*d.* per cwt.?
3 Add together $1\frac{3}{8}$, $\frac{1}{6}$, $\frac{5}{18}$, $2\frac{1}{12}$.
4 Divide $\frac{2}{5}$ by $\frac{3}{7}$, and multiply the product by $\frac{2}{3}$.
5 Multiply 32·16 by 22·5.
6 Divide 9·065 by ·049.

Examination after Probation.

Add $\frac{3}{4} \times \frac{5}{8} \times \frac{2}{3}$.
Multiply $\frac{3}{4} \times \frac{7}{8}$.
Divide $\frac{4}{3} \div \frac{5}{6}$.
Multiply 19·378 by 19·38.
Divide 3·24 by ·25.

Case v.

1st *Examination.*

1 Calculate the duty on 356 cwt. 3 qrs. 16 lbs. of foreign white clayed sugar at 12*s.* 10*d.* per cwt.
2 Do. at 15*l.* per cent. on goods worth 895*l.* 16*s.*
3 Add together $\frac{2}{7}$ of 18 and $\frac{3}{5}$ of $1\frac{4}{21}$.
4 Divide $\frac{2}{5}$ by $\frac{3}{7}$ and multiply the product by $\frac{2}{3}$.
5 Add together 1·3046*l.*, 15·031*l.*, ·0082*l.* and 3·29*l.*, and find the value of the sum.
6 Multiply 22·5 by 32·16.
7 Divide 9·065 by ·049.

2nd *Examination.*

1 Calculate the duty on 353 cwt. 2 qrs. 7 lbs. of foreign refined sugar at 17*s.* 4*d.* per cwt.
2 Find the value of 7 cwt. 3 qrs. 11 lbs. at 2*l.* 13*s.* 1*d.* per quarter.
3 Subtract $2\frac{5}{8}$ from $3\frac{3}{4}$.
4 Add together ·0204*l.*, 1·326*l.*, and ·003*l.*, and find the value of the sum.
5 Divide 2·5 by ·32.

Examination after Instructions.

Return for duty 60 chests of liquorice paste weighing 160 cwt. 2 qrs. gross, allowing for tare 42 lbs. each chest, and for leaves 7 per cent.
What dimensions are required to find the contents of a cask?
How do you ascertain the strength of spirits?
Timber $32\frac{1}{2}$ feet length—$24\frac{1}{2}$ inches side,—how is the content for duty ascertained?
Deals cubed in pile—460 pieces 15 ft. 3 in. length, 22 ft. 2 in. height, 4 ft. 8 in. width.
State the percentage tare of 3 casks of currants. Weight 54 cwts. 3 qrs. 15 lbs. Tare of casks 4 cwts. 2 qrs. 15 lbs.
Two cases of toys, each 10 ft. 7 in. × by 5 ft. 7 in. × 4 ft. 3 in. No. of feet for duty.
3 Carpets, each 11 : 10 by 9 ft. 7 in. No. of yards for duty.
Divide 76·86 by 9·6.
Multiply 75·6 by 6·75.

104 Casks of tallow, gross weight 1248 cwt. 3 qrs. 17 lbs., tare 12 per cent.; what is the net weight?

24 Butts of currants, gross weight 373 cwts. 3 qrs. 26 lbs., tare 14 per cent.; what is the net weight?

10 Cases of liquorice paste, gross weight 22 cwt. 2 qrs. 15 lbs., tare 37 lbs. per case, and 7 per cent. for leaves; what is the net weight?

How many square yards in the under-mentioned carpets?—

1 carpet 24 ft. 10 in. × 21 ft. 6 in.
1 —— 12 ft. 9 in. × 18 ft. 4 in.

Show the content of the following piles of deals, measuring as under:—

Deals.	*ft.*	*in.*		*in.*		*in.*
120 —	21	2	×	67	×	66.
120 —	18	1	×	66	×	61.
120 —	16	0	×	63	×	55.

1 case of bottled brandy, 72 bottles (reputed claret quarts) each bottle measuring 5½ gills and 9·5 over proof; what quantity for duty? (and weight of glass.)

100 butts of currants, weighing gross 1970 cwts., 2 qrs. 14 lbs., net quantity required; tare 18 per cwt.?

How many cubic feet are contained in a case of toys, measuring as under?

Length.			Depth.			Width.	
ft.	*in.*		*ft.*	*in.*		*ft.*	*in.*
8	6	×	4	8	×	3	6

If 20 butts of currants weigh 360 cwts. 3 qrs. 14 lbs. gross, and each butt tares 360 lbs., how much is that per cent.?

How many square yards are contained in 15 pieces of stained paper, each measuring 25 yards long by 2 feet 6 inches wide?

What is the net weight of 100 chests of liquorice juice, weighing 250 cwts. 3 qrs. 10 lbs. gross, tare 50 lbs each, and an allowance of 6 per cent. for leaves?

In 20 double and 20 single barrels of anchovies, weighing 12 cwt. 3 qrs. 10 lbs. gross, tare 14 lbs. each double barrel, 6 lbs. each single barrel, and one third part allowed for salt and pickle, how many pounds net?

If 4 jars of olive oil weigh 12 cwt. 3 qrs. 20 lbs. gross, how many gallons are contained therein, after making the usual allowance, viz., one-third as tare for jars, and one-seventh for sediment?

In 2 cases of looking-glasses, being plate glass, each plate not containing more than 9 square feet, how many square feet for duty?

Plates.	*Wide.*	
	in.	*in.*
20 each	27	× 14
12 „	24	× 19
10 „	36	× 24

In 1 package leaf metal, how many packets for duty? Contents 250 bundles, each 10 packets, each 20 books, each 19 leaves.

4 baskets of sweet almonds, in the shell, weighing proof 6 cwt. 2 qrs. 5 lbs., how many pounds net. Tare 9 lbs. and the usual allowance for shells?

State the number of square yards in 50 pieces of paper hangings, each piece measuring 10½ yards long, by a breadth of 19 inches.

Bring 1 qr. 14 lbs. 12 ozs. of roses into ounces, allowing $\frac{1}{7}$ part for tare?

What is the tare on 50 cwt. 2 qrs. 7 lbs. of almonds, in the shell, in 20 casks. Tare for casks 30 lbs. each, and $\frac{2}{3}$ part for shells?

What is the tare per cent. on a cargo of currants, the gross weight as under?—

	cwt.	*qrs.*	*lbs.*		*cwt.*	*qrs.*	*lbs.*
1	17	1	18		2	1	15
2	11	3	27		2	3	11
3	22	1	5		3	0	15
4	14	1	24		1	3	36
4	74	0	18		10	1	11

A block of marble 4 ft. × 3 ft. 4 in. × 3 ft. 2 in., how many feet?

5 cases of liquorice juice, 10 cwt. 0 qr. 19 lbs. gross, cases, tare together 205 lbs., allowed for leaves 7 per cent. State the quantity for duty.

Case VI.

1st *Examination.*

1 Find the value of 7 cwt. 3 qrs. 11 lbs. at 2*l.* 13*s.* 11*d.* per cwt.
2 Divide 3·24 by ·25.
3 Add together 2·8146, ·0938, 8, ·875, 31·2788, 4·0087.
4 Find the value of 89 at 3*s.* 11$\frac{3}{4}$*d.*

2*nd* *Examination.*

Find the value of 6 cwts. 1 qr. 11 lbs. at 2*l.* 17*s.* 9*d.* per. cwt.
Calculate the duty at 5*l.* per cent. on goods worth 857*l.* 16*s.*
Find the value of $\frac{1}{2} + \frac{3}{4} + \frac{5}{6} + \frac{7}{9}$.
Divide 2·5 by ·32.
Find the value of 2·325 of 1*l.*

Case VII.

1st *Examination.*

1 Calculate the duty on 356 cwt. 3 qrs. 16 lbs. of sugar at 12*s.* 10*d.* per cwt.
2 Divide $\frac{2}{5}$ by $\frac{3}{7}$, and multiply the product by $\frac{2}{3}$.
3 Add together $\frac{2}{7}$ of 18, and $\frac{3}{5}$ of $1\frac{4}{21}$.
4 Add together 1·3046*l.*, 15·031*l.*, 0082*l.*, 3·29*l.*, and find the value of the sum.
5 Divide 3·24 by ·25.

2*nd* *Examination.*

1 Calculate the duty on 7 cwt. 3 qrs. 11 lbs. at 2*l.* 13*s.* 1*d.* per quarter.
2 Add together $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{6}$, $\frac{7}{9}$.
3 Divide $\frac{3}{5}$ of $\frac{8}{9}$ by $\frac{7}{6}$ of $\frac{3}{4}$.

4 Multiply 332·1 by 44·1.
5 Divide 2·5 by ·32.

CASE VIII.

1 Calculate the duty on 356 cwt. 3 qrs. 16 lbs. of sugar at 12*s.* 10*d.* per cwt.
2 Calculate the duty at 15*l.* per cent. on goods valued at 963*l.* 15*s.*
3 Add together $\frac{2}{7}$ of 18, $\frac{1}{2}$ of $3\frac{1}{3}$.
4 Multiply 33·21 by 4·41.
5 Divide 9·065 by ·049.
6 Add together ·0204*l.*, 1·326*l.*, and ·003*l.*, and find the value of the sum.

CASE IX.

1 Calculate the duty on 356 cwt. 3 qrs. 16 lbs. of foreign white clayed sugar at 12*s.* 10*d.* per cwt.
2 Calculate the duty at 15*l.* per cent. on goods valued at 963*l.* 15*s.*
3 Add together $1\frac{3}{8}$, $\frac{1}{6}$, $\frac{5}{18}$, and $2\frac{1}{12}$.
4 Divide $\frac{2}{5}$ by $\frac{5}{7}$, and multiply the product by $\frac{2}{3}$.
5 Multiply 4·41 by 33·21.
6 Divide 9·065 by ·049.
7 Add together 1·3046*l.*, 15·031*l.*, ·0082*l.*, and 3·29, and find the value of the sum.

COMMISSARIAT.

ARITHMETIC.

1 State the value of 849 cwt. of flour at 1*l.* 16*s.* $9\frac{1}{2}$*d.* per cwt.
2 What would be the cost of 5,000 lbs. of salt beef at 2*l.* 15*s.* 4*d.* per cwt.?
3 If the carriage of 8 cwt. of coals 128 miles cost 48*s.*, what would be the charge for 4 cwt. 32 miles at the same rate?

4 What will 100*l.* 6*s.* 8*d.* amount to with compound interest for five years at 5 per cent. per annum, the interest being paid annually?

5 What would be the amount of a salary of 95*l.* per annum, subject to a deduction of 2*l.* 7*s.* 6*d.* per cent. per annum, for one year and 25 days?

6 What would be the charge for fuel for 800 men for 12 months, provided the ration for each man per diem consisted of $1\frac{1}{5}$ foot of wood from the 1st May to the 31st October, and half that quantity for the remainder of the year, the price of the wood being $6\frac{5}{9}d.$ per foot?

7 Suppose the price of salt meat to be $5\frac{6}{7}d.$ per pound, the ration to the troops to be 9 ounces per man per diem two days per week, fresh meat being issued five days per week; what quantity would be required to supply 460 men for the month of May, and what would be the cost to the public?

8 Add together $\frac{7}{16}$, $\frac{7}{15}$, and $\frac{11}{13}$.

9 Subtract $\frac{5}{12}$ from $\frac{7}{8}$.

10 Multiply $\frac{5}{9}$ of $\frac{8}{12}$ by $\frac{6}{7}$.

11 Divide $\frac{6}{7}$ by $\frac{2}{9}$.

12 Suppose $6{,}948\frac{5}{7}$ dollars were purchased at $48\frac{7}{8}d.$ each, and that they were issued at $\frac{5}{9}$ of a penny more than that rate; what would be the total cost of the dollars, the total amount for which they were issued, and the total gain upon the transaction?

Note.—The working of the several questions to be produced with the answers.

BOOK-KEEPING.

1 Define the terms "double entry," "debit and credit," and explain why two entries in every transaction are required under this system.

2 Describe what is usually understood in book-keeping by the general terms "real accounts," "personal accounts," and "profit and loss account."

3 Describe the books of account necessary in a method of book-keeping by double entry in its most simple form.

4 Prepare forms of such books, and state the purposes which each book is intended to answer.

5 State the difference between the mode of entering a transaction in the waste book and the journal.

6 State what are the two first entries made in the journal by a trader commencing business.

7 In real accounts, on which side of the ledger are articles received entered?

8 If a merchant, not satisfied with the knowledge of the profit or loss on his merchandise generally, should wish to prepare his books so as to give him a view of the profit or loss on each description of merchandise in which he deals, how must he set about it?

9 How are books balanced and closed?

10 If a real account closes with a loss, to which side of the profit and loss account should the balance be carried?

11 What object is the balancing intended to accomplish?

12 If a merchant should be a loser in summing up the whole of his transactions of the year, from what account in the ledger could that information be obtained?

13 If a merchant should prove insolvent on the closing of his books, in what account of his ledger would that result appear?

POST OFFICE.

Case I.

What is the income of a person who pays 22*l.* 7*s.* 5*d.* for income tax at the rate of 7*d.* in the £?

What must an income of 400*l.* pay towards an income tax of 4*s.* 6*d.* in the £?

44½ guineas used to be coined out of 1 pound of standard gold, how many sovereigns are now coined out of this weight?

If a bankrupt is able to pay 12*s.* 6½*d.* in the £, and his debts amount to 3600*l.*, what is his estate worth?

If a bankrupt owes 4726*l.* 10*s.*, and his effects are worth 1181*l.* 12*s.* 6*d.*, how much will he be able to pay in the £?

Exercise in Addition.

Name of Towns.	No. of 3d. Orders.	No. of 6d. Orders.	Total.	Balance due from on previous day.	Amount of orders issued.	Commission on 3d. orders.	Commission on 6d. orders.	Total.	Balance at close of day.
				£ s. d.	£ s. d.	s. d.	s. d.	£ s. d.	£ s. d.
Maidstone	35	15		230 15 4	100 2 9	8 9	7 6		
Malton (New)	13	8		25 7 3	40 16 6	3 3	4 0		
Malvern	13	3		64 17 0	22 15 6	3 3	1 6		
Market Raisin	3	5		99 6 11	24 19 8	0 9	2 6		
Marlborough	9	7		39 11 5	36 3 1	2 3	3 6		
Maryport	6	2		16 17 9	14 2 1	1 6	1 0		
Matlock (Derby) ...	5	1		36 19 1	8 11 0	1 3	0 6		
Merthyr Tydvil ...	12	7		84 8 0	42 5 9	3 0	3 6		
Middlesborough ...	6	5		15 1 9	22 8 3	1 6	2 6		
Middlewich	5	2		13 6 6	13 13 8	1 3	1 0		
Milford	1	2		20 18 10	7 14 0	0 3	1 0		
Mold	1	1		100 18 0	5 0 0	0 3	0 6		

	No. of 3d. Orders.	No. of 6d. Orders.	Total.	Balance due to on previous day.	Amount of orders paid.	Remittances.	Total.
				£ s. d.	£ s. d.	£ s. d.	£ s. d.
George Jury 318	17	8			49 10 6	40 0 0	
George Barnby 61	1	2			9 16 6	——	
Thomas Swan 62	3	1			8 7 0	20 0 0	
John L. Thornton..... 30	—	5			24 10 0	——	
William Wootten Lucy 122	2	1			5 9 0	——	
Joseph Brown 80	—	1			3 8 0	——	
Frances Shore 56	2	3			12 0 2	——	
Gwenllian Davis 70	4	5			25 14 8	26 15 6	
Patience Thompson... 76	8	4			22 3 0	——	
Elizabeth Nicklin ... 49	4	4			17 0 1	——	
Charlotte A. Pritchard 53	4	—			3 19 0	——	
John Catherall 54	2	—			1 15 3	45 0 0	

CASE II.

What must 2*l.* pay towards a tax when 650*l.* 13*s.* 4*d.* is assessed at 83*l.* 12*s.* 4*d.*?

Reduce 125*l.* 10*s.* into francs and centimes, exchange at 23 francs 6 centimes per 1*l.* (100 centimes = 1 franc).

Divide 74*l.* 13*s.* 6*d.* by 17.

Salary 28*l.* 7*s.* a-year, what is due for 95 days?

CASE III.

What is the income of a person who pays 22*l.* 7*s.* 5*d.* for income tax, at the rate of 7*d.* per pound?

If an officer's pay is 12*s.* 3*d.* per day, what is that per year?

A banker owes 2468*l.*, and he could pay 15*s.* 6*d.* in the pound, what were his effects worth?

There were 377 labourers employed in the Royal Exchange and the New Houses of Parliament, what were their whole wages per week at 1*s.* 8*d.* per day each?

A bankrupt owes 4726*l.* 10*s.*, and his effects are worth 1181*l.* 12*s.* 6*d.*; how much will he be able to pay in the pound?

The charge of carrying the mails by railway to Birmingham is 28*l.* 4*s.* 4*d.* per day; how much is that in 365 days?

CASE IV.

As 650*l.* 13*s.* 4*d.* : 83*l.* 12*s.* 4*d.* : : 2*l.*

Divide 74*l.* 13*s.* 6*d.* by 17.

Salary 28*l.* 7*s.* a-year, what is due for 95 days?

Reduce 125*l.* 10*s.* into francs and centimes, exchange at 23 francs 6 centimes per £ (100 centimes=1 franc).

CASE V.

Divide 85*l.* 6*s.* by 72.

In 35 guineas how many farthings?

28 yards of cloth at 19*s.* 4*d.* a-yard.

If a horse cost 1*s.* 11*d.* a-day, what will be the charge of 11 horses for one year?

CASE VI.

Divide 7,652,194*l.* 0*s.* 9*d.* by 3076*l.*

What is the interest of 387*l.* 14*s.* 2½*d.* at 3¼ per cent. per annum for five years and three months?

Multiply 2487*l.* 14*s.* 2¼*d.* by 3,076*l.*
From 4,768,954*l.* 13*s.* 7½*d.* take 2,989,767*l.* 18*s.* 11¾*d.*

£	*s.*	*d.*
501	16	8
304	2	9¾
893	15	11½
217	4	10
1	3	4¾
1052	14	10¾
648	17	6½
219	4	2¾

Write in figures one million four hundred and eighty-seven thousand six hundred and twenty-three bales of cotton.

PART V.

Materials for Précis, Subjects for English Composition, and Correspondence.

PRÉCIS.

A.

Read the following letter :—

"Office of Committee of Privy
Council for Trade,
Whitehall, 27th June, 1854.

"My Lord,

"With reference to the correspondence that has passed between the Poor Law Board and the Lords of the Committee of Privy Council for Trade on the subject of the collection of agricultural statistics, I am directed by their Lordships to acquaint you, for the information of the Poor Law Board, that the Lords of the Treasury have been pleased, upon the application of my Lords, and in consideration of the success which last year attended the experiments for the collection of the agricultural statistics of Norfolk and Hampshire, conducted with so much zeal and ability by Sir John Walsham and Mr. Hawley, to authorise the insertion in the estimates of the present year of a sum of 4,000*l.*, for the purpose of instituting similar experiments, on a considerably extended scale, in England and Wales. This estimate will probably be submitted for the sanction of Parliament within a few days.

"My Lords feel assured, from the experiments already made, that there is no Department of the State so well calculated to bring this further important experiment to a successful issue as

the Poor Law Board, and I am therefore to request that your Lordship will express to the Board their Lordships' hope that it will be willing to undertake the task of conducting it. In this case, my Lords presume that on the present occasion the agency of the Boards of Guardians and their officers would be again employed, under the superintendence of the Poor Law Inspectors.

"Should the Poor Law Board be disposed to concur with my Lords in this view, their Lordships direct me to request that, considering the importance of losing no time in setting the necessary machinery in motion, they may be favoured with an early intimation of the number and names of the counties which the Board may decide upon selecting for the purpose of the present experiment, having regard to the amount which it is proposed to devote to it, and to the experience derived from the cost of the previous experiment. Their Lordships will also be glad to receive and consider any alterations in the schedules which it may be proposed to make, and in all other respects to give every assistance in their power towards furthering this important object.

"I have the honour to be, my Lord,

"Your Lordship's obedient servant,

"*The Viscount Courtenay,* "JAMES BOOTH.

"*Secretary to the Poor Law Board.*"

And write an answer to Mr. Booth,—

Acknowledging the receipt of the above.

The Board accede, but wish the inquiry to be considered as experimental.

Suggest Norfolk and Suffolk under Sir J. Walsham, Hants and Wilts under Mr. Hawley, and Leicester under Mr. Wale.

Have requested Sir J. Walsham to revise forms and instructions, which he has done: copy of them enclosed.

B.

Write a short Abstract of the substance of the following correspondence and papers:—

Glossop Union,

MY LORDS and GENTLEMEN, 26 February, 1853.

In consequence of there being no schoolmaster at the union

workhouse, the board of guardians contemplate sending what few children there are in the workhouse to the Swinton school connected with the Manchester union; application has been made for that purpose, and it appears they can be received into that establishment, clothed, maintained, instructed, and provided with medical attendance, at a charge of 3*s.* 3*d.* per week, provided the consent of the Poor Law Board be obtained thereto. I have therefore been requested to obtain the consent of your honourable board to the proposition of the guardians to send the children to the said school.

I am, &c.,

(Signed) GEORGE BOWDEN,
The Poor Law Board, &c. Clerk to the Guardians.

Poor Law Board, Whitehall,
SIR, 12 March, 1853.

I am directed by the Poor Law Board to acknowledge the receipt of your letter of the 26th ultimo, in which you apply for their consent to the guardians of the Glossop union sending the children from the workhouse to the Swinton school.

The board consent to the proposal of the guardians being carried into effect; but, before they finally sanction the arrangement, they request that the draft of the contract which the Glossop guardians may propose to enter into with the Manchester guardians, for the education and maintenance of the children in the school, may be submitted for their inspection.

I am, &c.,

(Signed) COURTENAY, Secretary.

G. Bowden, Esq.,
Clerk to the Guardians.

Glossop Union,
MY LORDS and GENTLEMEN, 15 March, 1853.

In compliance with the request contained in your letter of the 12th instant, I beg to forward for your inspection the draft of the contract which the guardians of this union propose to enter into with the Manchester guardians for the education and maintenance of the children from the workhouse here in the Swinton school.

I am, &c.,

(Signed) GEORGE BOWDEN,
The Poor Law Board, &c. Clerk to the Guardians.

Poor Law Board, Whitehall,
SIR, 12 May, 1853.

I am directed by the Poor Law Board to return to you the draft of the contract proposed to be entered into by the guardians of the Glossop union with the guardians of the township of Manchester for the admission of pauper children belonging to the Glossop union into the Swinton schools.

The Poor Law Board approve of the terms upon which the children are to be received into the schools in question, and they accordingly recommend that the proposed contract be executed by the contracting parties. I am, &c.,

(Signed) COURTENAY, Secretary.

G. Bowden, Esq.,
Clerk to the Guardians.

Poor Law Board, Whitehall,
SIR, 22 September, 1854.

I am directed by the Poor Law Board to state that they learn from a report made to them by their inspector, Mr. Doyle, after having visited the workhouse of the Glossop union on the 2nd instant, that an entry had been made in the visitors' book by one of Her Majesty's inspectors of schools on the subject of the arrangement entered into between the guardians and the guardians of Manchester, for the maintenance and education of of the pauper children of the Glossop union in the school at Swinton.

I am directed to request that you will furnish the Board with a copy of the entry referred to.

I am, &c.,

(Signed) A. FLEMING, Assistant Secretary.

G. Bowden, Esq.,
Clerk to the Guardians.

Glossop Union,
26 September, 1854.

MY LORDS and GENTLEMEN,

In compliance with the request contained in your letter of the 22nd instant, I beg to forward you herewith, copies of two entries made in the visitors' book by Mr. Browne, one of Her Majesty's Inspectors of Schools, on the subject of the arrangement entered into between the guardians of this union and the

guardians of Manchester, for the maintenance and education of the pauper children at Swinton.

I am, &c.,

(Signed) GEORGE BOWDEN,
Clerk to the Guardians.

The Poor Law Board, &c.

I have examined the children here, and find them in a very low state; they appear to have been greatly neglected. I understand that it is proposed to send the pauper children in this house to Swinton; there can be no objection to this as a temporary arrangement, but Swinton is not really too large for the pauper children of Manchester alone, and there can be no doubt that there ought to be a school in this union for the Glossop children. The effect of sending the children out of the union to Swinton will be this, that many children whose stay is uncertain, but who often do remain in the workhouse a considerable time, will not be sent to Swinton, and consequently remain uneducated. The pauperism of every union must bear a certain proportion to its population, and taking into consideration the population of Glossop, it is evident that there must be a sufficient number of outdoor pauper children in this neighbourhood to form with the present inmates a school in the workhouse quite large enough to occupy fully the time of one teacher at least. Outdoor pauper children are now instructed in the workhouse at Manchester and in several other unions. As the salary of a teacher in Glossop workhouse would be paid from the Parliamentary grant, it is probable that the guardians would be able to educate 40 or 50 children here for an annual outlay less than what it would cost to educate 10 or 12 children at Swinton.

(Signed) T. B. BROWNE, Inspector of Schools.

11 April, 1853.

The children here are under the charge of a pauper, and in a state of extreme ignorance. None could read. The Lord's Prayer was repeated, but not understood. I have to recommend that a school be organized in the workhouse for the pauper children of this union. The result of the present arrangement under which the elder children are sent to Swinton is, that all children of an age to receive instruction are not properly instructed, as I anticipated. The duties of the guardians in re-

spect of education are not discharged by educating some children and neglecting the rest.

(Signed) T. B. Browne, Inspector of Schools.

27 March, 1854.

P.S.—It would be found, I think, more economical to educate the children in the workhouse, when suitable accommodation was once provided, than to pay for 10 at Swinton, as the teacher's salary would be paid from the Parliamentary grant.

COMPOSITION.

A.

Select one of the following subjects for English Composition :—

1 A letter from an Australian colonist, describing the effects of the discovery of gold, and speculating as to its future consequences :

Or,

2 A comparison of the merits and defects of any two historians with whose works you are acquainted :

Or,

3 An essay on the influence of increased habits of travelling on national character.

B.

Write a letter applying for a situation in a mercantile house, selecting any branch of business you please. State fully the duties you are prepared to undertake, the nature of your previous employment, and any other circumstances which would naturally be mentioned in such an application.

The letter should fill about two folio pages.

C.

Supposing yourself to have been asked to undertake the

management of a gentlemen's estate, write a letter accepting or rejecting the offer.

'State as fully as you can the duties you conceive to be attached to the situation, and the reasons which have influenced your decision.

The letter should fill not less than two folio pages.

D.

Supposing yourself to have received an offer of a situation in one of our colonial dependencies, write a letter accepting or rejecting it. Select any situation you please; state the nature of the duties and responsibilities which appear to be attached to it, and the reasons which have influenced your decision.

The letter should fill not less than two folio pages.

E.

A London merchant has sent out a confidential agent to *one* of the following places; Hamburgh, Dantzic, Stockholm, Havre de Grace, Rio Janeiro, Lisbon, New York, or Boston U.S., with a view to his making full inquiries into the present state and future prospects of trade. Write a letter, as from such an agent to his employer, informing him of the result of such inquiries, and giving him full information on any point that would be useful under such circumstances.

The letter should fill not less than two folio pages.

PRECIS AND CORRESPONDENCE.

Read the following correspondence, and—

(1) Make a short abstract of the several letters.

(2) Write a final answer from the Secretary to the Admiralty, referring to and repeating the *substance* of the preceding letters, and rejecting the proposals of the Company.

Mr. Howell to the Secretary of the Admiralty.

Peninsular and Oriental Steam Navigation Company,
February 2, 1853.

SIR,

I am instructed by the Directors of the Peninsular and Oriental Steam Navigation Company to request you will be pleased to represent to the Lords of the Admiralty that the Directors entertain great apprehensions that the Contract Mail Service in the Indian, China, and Australian Seas must ere long be seriously interrupted for want of coal. The moment that the Company's tender for the new mail contract was accepted in March last, they commenced contracting for the supply of fuel to meet the double service, but from that time, owing to the scarcity of shipping, the prices of freight for its conveyance have risen so much as to amount to an increase of nearly 100 per cent., and at such prices the addition of cost to the Company on the year's operations would amount to upwards of 130,000*l.*, as per statement enclosed; this is exclusive of the Australian service. At the time of tender, coals, the produce of that country, could be obtained in abundance at 18*s.* 6*d.* per ton; this supply has already ceased altogether, the labour of the mines having been drawn to the gold fields; and now 80*s.* per ton for coal delivered at ports in Australia from this country has been unavailingly offered.

But the question is now no longer one of price, the fact being that such has been the demand for shipping during the last six months, and such it still continues, that available tonnage, whether British or foreign, does not exist at the present time in the United Kingdom. A contractor with the Company and one of the largest ship-owners and agents in this country, unable to obtain tonnage in fulfilment of his contract, incurred a penalty to the extent of 3,062*l.* 11*s.* 1*d.*, which, under the circumstances, the Company mitigated to 1,903*l.* 15*s.* 5*d.* and this amount he has paid. Another party, after supplying 3,900 tons of coal for Aden, under a contract for 8,000 tons, have announced their total inability to find tonnage for its completion.

The Directors, although aware that other steam-mail contractors are likewise suffering from the same cause, have abstained from all communication on this subject, directly or indirectly; their cases, however, in comparison with that of the Peninsular and Oriental Company, are very different in extent.

It has been ascertained that for colonial service alone, exclusive of Australia, no less than 111,000 tons per annum have to be placed at distances requiring a period of six months between contract and delivery.

Under these circumstances, the Directors have felt it to be their duty to their Lordships, to their shareholders, and to the public, to make this statement, and to request that their Lordships may be pleased to direct an immediate inquiry to be instituted in the matter, so that their Lordships may in time be thus better prepared to deal with the question with that measure of justice between the public service and the contractor with which they have always met cases of emergency and unforeseen difficulty.

(Signed) C. W. HOWELL,
Secretary.

The Secretary to the Admiralty to the Peninsular and Oriental Company.

GENTLEMEN, Admiralty, February 4, 1853.

Having laid before my Lords Commissioners of the Admiralty your letter of the 2nd instant, on the subject of the difficulty of obtaining supplies of coals for carrying on the mail service under your contract, I am commanded to acquaint you that, under these circumstances, my Lords would wish to be informed if you are prepared to surrender your contract, in order to its again being thrown open for public competition; and that my Lords wish for an early reply.

I am, &c.,
(Signed) W. A. B. HAMILTON.

Mr. Howell to the Secretary of the Admiralty.

Peninsular and Oriental Steam Navigation Company,
Offices, 122, Leadenhall Street,

SIR, London, February 9, 1853.

Referring to my letter of the 2nd instant, in which I had the honour to state, for the information of the Lords Commissioners of the Admiralty, that a special meeting of the Board of Directors had been summoned for this day, to take into consideration their Lordships' letter of the 4th instant, I am now instructed respectfully to request that the directors may be informed whether they

are correct in the inference to which they have been led by the tenor of that communication, that their Lordships do not feel disposed to institute an inquiry with a view of ascertaining whether it be a fact that sufficient available tonnage does not now exist in this country, or is likely to be within reach for many months, for the conveyance of fuel to the Company's depôts in the Eastern Seas, seeing that the quantity of tonnage requisite for the transport of coal to the extent necessary for the performance of the semi-monthly service, including the Australian line, is not less than 10,000 tons per month.

It is upon the existence or non-existence of the means of transport, the Directors take leave to submit, that the whole question hinges; they have without hesitation paid latterly 100 per cent. more in the price of coals than the same supply would have cost at the rates which ruled when their tender for the double mail service was accepted in March last, and it was not until price ceased to form part of the question that the Directors applied to their Lordships, with a request that they would be pleased to take cognizance of the existing state of things. The Directors would respectfully repeat their conviction that twenty sail of vessels of 500 tons each, or for any other burden equal to 10,000 tons per month, cannot now be obtained; and they beg to solicit their Lordships' perusal of the letters from well-known contractors, enclosed herewith, confirming their opinion.

It is within the knowledge of the Directors, that all available and suitable tonnage has been swept away from the ports of Holland, and that large Dutch ships are now loading at Liverpool for Australia; it is also a fact that even a Spanish ship having arrived at Liverpool, her consignee received the very next day a lucrative offer for freight for the British colonies.

As soon as the impending scarcity of shipping became apparent, not only did the Directors yield to the higher prices required by the contractors, but they sought for other means of keeping up a supply, and purchased at a cost of 15,000*l.* a screw-collier, with the intention of employing her in the conveyance of fuel from the coal-producing districts of the Eastern Archipelago to their depôts in the China Seas; this vessel, which is capable of carrying 700 tons of coals, is being completed with all despatch.

Under all the circumstances of the case, the Directors would now respectfully suggest that as the Company have at present *in store, and on* the way to their Eastern depôts, sufficient fuel

for twelve months' consumption, or nearly so, for carrying on a monthly communication, as shown by the enclosed tables marked A and B, the execution of the new arrangements for the semi-monthly communication be postponed for that period, and that in the interim the mail service be carried on monthly under the yet existing contract of 1844, the Company continuing to perform at a mileage rate, to be agreed upon, the service between Marseilles and Malta, and between Singapore and Australia, upon which they have already entered.

In carrying out this proposition, the Company must still seriously suffer, inasmuch as they have already built, and have under construction, nine steam-ships intended for the performance of the double service, involving an outlay of 650,000*l.*; which amount of capital must remain not only unproductive, but undergoing depreciation pending the commencement of the operations for the execution of which it was expended.

I have, &c.,

(Signed) C. W. Howell, Secretary.

Messrs. W. S. Lindsay and Co., to the Peninsular and Oriental Company.

Gentlemen, 8, Austin Friars, Jan. 27, 1853.

We have your instructions with respect to the Hong-Kong contract held by us.

Knowing, however, your very great anxiety with relation to these contracts, we think it our duty to advise you exactly how we stand as contractors with you.

We have, as you are aware, as large a command of tonnage as any firm in this country.

Notwithstanding this, however, we are utterly precluded from fulfilling our engagements for Hong-Kong, as, from your own knowledge of the extraordinary position of the shipping trade, you cannot but be aware.

With regard to Singapore, the prospect of obtaining tonnage is, if possible, even worse; and we really do not see how we can find ships for the balance of our contract for that port.

It is not a question of rate. There are no ships. They are either fixed for Australia, or fixed there for want of crews to bring them away.

The difficulty is absolute, and quite independent of any question of rate. Viewing this, we feel bound to tell you

candidly, that unless a change take place we must break down in our contract with you.

We will leave no stone unturned to perform our part, but we cannot do impossibilities; and, under the extraordinary circumstances of the case, we anxiously await your advice as to how we should act in order to protect your interests.

We are, &c.

(Signed) W. S. LINDSAY & Co.

Messrs. H. & C. Toulmin to Mr. Howell.

SIR, 31, Great St. Helen's, Feb. 1, 1853.

In reference to our contracts for the delivery of coals at Ceylon, Calcutta, and Bombay, we are sorry to inform you that it will be quite impossible for us to fulfil them, from the fact that vessels are not to be had for this employment. We have been for some time endeavouring to procure tonnage, we may almost say, without reference to the rate of freight, but cannot succeed.

We attribute the cause on the one hand to the detention of vessels in Australia, and on the other to the great demand that exists for the few vessels available, the owners of which will not take a freight of coals so long as they can get other employment.

We shall continue to do our best; at the same time we do not think there will be a change in this state of things for some time to come, and we therefore trust you will deal leniently with us, since the inability to comply with the terms of the contract arises from circumstances over which we have no control.

We are, &c.

(Signed) H. & C. TOULMIN.

Messrs. Phillips, Shaw, and Lowther, to the Peninsular and Oriental Company.

2, Royal Exchange Buildings,

GENTLEMEN, February 2, 1853.

With reference to your inquiry as to the rate at which we would undertake to supply you with coal at Singapore and other ports in India, we beg to say that at the present time we could not undertake any contracts for so doing.

We were on the 24th ultimo requested by you to furnish tenders for the supply of 4,000 tons of coal to Singapore, to leave this country during the months of February and March. Our

principal filled in, sealed, and was on the point of forwarding to you, the accompanying tender for such supply at the rate of 70*s.* per ton, deeming at the time that it would be a safe and profitable transaction. Fortunately, just as the tender was about to leave this office, one of his partners came in and expressed his conviction that we should be unable to obtain tonnage at even that high rate, which opinion has by subsequent experience been fully justified, and we now congratulate ourselves on not having handed it to you.

We hand it to you still sealed, together with your letter, in the margin of which you will find the rate marked by the writer for our guidance, had you accepted the tender.

We beg to add that we could not now accept much higher terms for the required supply.

We remain, &c.,

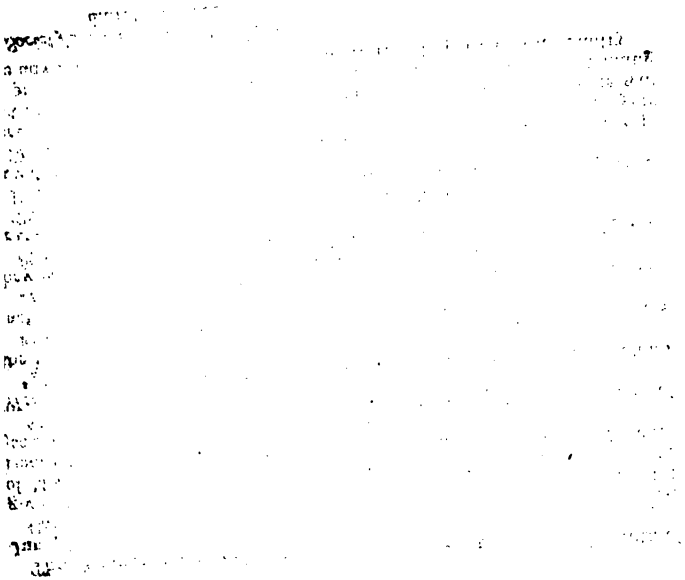
(Signed) PHILLIPS, SHAW, & LOWTHER.

In the Competitive Examination for the War Department, the following notes were given as the subject of a composition :—

OUTLINES OF AN ESSAY.

Sur les changements produits par la Machine à Vapeur dans les Manufactures et le Commerce, dans la manière de voyager par terre et par mer, dans celle de faire la guerre par mer, et sur l'influence qu'elle aura sur la civilisation et le bien-être de la société.

P. S. KING, Printer, Parliamentary Depôt, 12, Bridge Street, Westminster.



SCHEME OF THE EXAMINATIONS

PROPOSED BY

THE SOCIETY OF ARTS,

FOR

CANDIDATES FROM INSTITUTIONS ASSOCIATED WITH THAT SOCIETY.

RULES.

The Examinations will commence at 10 A.M. on Tuesday the 10th of June, 1856, at the Society's House in the Adelphi.

Candidates who propose to offer themselves for Examination, must give written notices of their intention to the Secretary before the 31st of May, 1856. Each Candidate must state the Institution to which he belongs, his age, his employment, and by whom employed, and the subjects in which he desires to be examined.

All Candidates will be required to possess a competent knowledge of Writing and Spelling.

*** The Examiners define good writing as a bold hand, in which *all* the letters are distinctly and completely formed.

Every Candidate will be expected to come prepared in two subjects (not sub-divisions of subjects) at least.

The Examiners in *Science* merely recommend the text-books set down: they will be prepared to recognise knowledge, however obtained.

The Examination will be conducted by written papers and by oral examination.

The Examiners will award Certificates of Three Classes.

First Class Certificates will be awarded only to a high degree of excellence.

Should the proposed Examinations receive the approbation and support of those classes for whose benefit they are undertaken—employers and candidates for employment—the Council of the Society of Arts will be prepared to take into their consideration the propriety of extending the advantages of the system to the more remote parts of the country.

Society's House, Adelphi, London.
March 22, 1856.

PRIZES FOR 1856.

Mr. R. Stephenson, M.P., Vice President of the Society of Arts, has placed Ten Guineas at the disposal of the Council, who have determined to award it to the Candidate who shall pass the best Examination in Mathematics and Mechanics, and obtain a First Class Certificate in each.

Mr. George F. Wilson gives a Prize of Ten Guineas, to be awarded to the Candidate who shall pass the best Examination in Chemistry, and obtain a First Class Certificate therein.

Mr. Mechi gives a Prize of Ten Guineas, to be awarded to the Candidate who shall pass the best Examination in the Principles of Agriculture and obtain a First Class Certificate therein.

Mr. Samuel Morley has placed Ten Guineas at the disposal of the Council, who have determined to award it to the Candidate who shall pass the best Examination in Physical Geography, and obtain a First Class Certificate therein.

Mr. Charles Wentworth Dilke, Vice President of the Society of Arts, gives a Prize of Ten Guineas, to be awarded to the Candidate who shall pass the best Examination in English History, and obtain a First Class Certificate therein.

Mr. G. N. Hooper gives a Prize of Ten Guineas, to be awarded to the Candidate who shall pass the best Examination in French, and obtain a First Class Certificate therein.

Mr. Peter Graham gives a Prize of Ten Guineas, to be awarded to the Candidate who shall exhibit the greatest proficiency in Free Drawing in Outline, and obtain a First Class Certificate therein.

Mr. John Wood, the Chairman of the Board of Inland Revenue, has placed two appointments *annually*, in the Surveying Department of the Excise, at the disposal of the Council of the Society of Arts.* No Candidate will be recommended for these appointments who shall not obtain *Second Class Certificates at least* in Mathematics, Chemistry, English Composition, and Writing from Dictation.

The Society of Arts will give a Prize of Twenty-five Guineas to that Candidate who shall be recommended to the Council by the Board of Examiners for General Excellence in the Examinations.

* The following are the rules laid down by the Commissioners, with respect to the qualifications of Candidates for admission into the Surveying branch of the Revenue:—

The Candidate must, on entering the service, be not less than nineteen, nor more than twenty-five years of age. A baptismal certificate, or other satisfactory evidence, will be required.

He must be healthy and active, and without any bodily infirmity. Of this a medical certificate will be required.

He must not be encumbered with debts; and must be unmarried, and without family, and of respectable character; and he will not be allowed to marry until he attains the rank of ride officer.

He must understand arithmetic, so as to work out sums in the rules of addition, subtraction, multiplication, and division, both in common arithmetic and in vulgar and decimal fractions, reduction, proportion, practice, and interest. He must be able to write a good hand, and correctly and fluently from dictation; and have a competent knowledge of book-keeping by double entry.

He will undergo an examination in the above-named subjects, and if approved will be placed under the instruction of an Excise officer for at least six weeks; at the expiration of which period, if he be found qualified to perform the duty of an officer, he will be certified for accordingly, and his salary will commence.

By Order, P. Le Neve Foster,
Secretary.

Subjects and Names of the Examiners.	Subdivisions, Text Books, and Limits.
MATHEMATICS. Mr. Ball Rev. Dr. Booth, F.R.S. Mr. Glaisher, F.R.S. Mr. G. H. Jay.	Arithmetic, Book keeping, Algebra, Euclid, Mensuration. Barnard Smith's Arithmetic (*Bell and Daldy*), or Colenso's Arithmetic (*Longmans*), to end of Proportion. Book-keeping by Double Entry, Irish School Series (*Groombridge*). Colenso's Algebra (*Longmans*), to end of Quadratic Equations. Euclid, books I., II., III. Tate's Mensuration (*Longmans*), or Mensuration, Irish School Series (*Groombridge*), Kelly's Elements of Book-keeping (*Simpkin and Co.*), Morrison's System of Book-keeping (*Griffin*).
MECHANICS. Rev. Dr. Booth, F.R.S. Mr. C. Brooke, M.A., F.R.S. Professor Goodeve, M.A. Rev. Bath Power, M.A.	Statics. The principles of Mechanism and their application to Simple Machines, to the Steam Engine, &c. Fowler's Mechanics (*National Society*). Galbraith and Haughton's Manual of Mechanics (*Longmans*). Lardner's Handbook of Mechanics (*Walton and Maberley*). Bird and Brooke's Elements of Physic (*Churchill*).
CHEMISTRY. Professor Solly, F.R.S. Dr. Stenhouse, F.R.S.	Organic and Inorganic. Wilson's Chemistry (*Chambers' Educational Course*). Fowne's Manual of Chemistry (*Churchill*).
PHYSIOLOGY. Dr. W. B. Carpenter, F.R.S. Dr. Bence Jones, F.R.S.	Carpenter's Manual (*Churchill*). Dr. Southwood Smith's Physiology of Health (*Charles Knight*).
BOTANY. Dr. W. B. Carpenter, F.R.S. Professor Henfrey, F.R.S.	General Structure, and Systematic Botany. Lindley's School Botany, (*Longmans*), Flowers of the Field, by Rev. C. Johns (*Christian Knowledge Society*). Henfrey's Rudiments of Botany (*Van Voorst*).
AGRICULTURE. Mr. James Caird Mr. J. C. Morton	Such a general knowledge of Farm Practice and of the management of live stock as must, to some extent, at any rate, have been obtained in the field. Low's Elementary Agriculture (*Longmans*), Johnston's Agricultural Chemistry (*Blackwood*), Mr. Pusey's Papers on the Progress of Agricultural Knowledge, in the 26th No. of the Royal Agricultural Society's Journal.

Subjects and Names of the Examiners.	Subdivisions, Text Books, and Limits.
GEOGRAPHY. Rev. Dr. Booth, F.R.S. Rev. S. Clark Dean of Hereford	Political and Physical. Cornwell's School Geography (*Simpkin and Co.*). Sullivan's Geography, Irish School Series (*Groombridge*). Milner's Geography (*Tract Society*), Guyot's Earth and Man (*Parker*). Mrs. Somerville's Physical Geography (*John Murray*). W. Hughes' Physical Geog. (*Longmans*). School Physical Atlas (*Keith Johnston*, or *National Society*).
ENGLISH HISTORY. Professor Brewer Rev. F. Temple	Ince's Outlines of English History (*Gilbert*). A more extensive knowledge of the following reigns—Alfred, William I., John, Henry VIII., Elizabeth, and the Stuarts to end of the reign of Anne.
ENGLISH LITERATURE. ENGLISH COMPOSITION. WRITING FROM DICTATION. Professor Brewer Rev. Dr. Elder Rev. W. Elliott Rev. F. Temple	Bromby's English Grammar (*Simpkin and Co.*). Chaucer's Prologue to the Canterbury Tales. Spenser's Fairy Queen, First Book. Shakespeare: King John, Henry IV., Henry V., Lear, Hamlet, Macbeth, Othello. Bacon: First Book of the Novum Organum; the Preface, Fifth and Seventh Books of the Advancement of Learning. Milton's Paradise Lost. Dryden: Virgil's Æneid, Six Books. Spectator. Pope: Poetical Works. Butler's Analogy. Wordsworth: Excursion, or Lyrical Ballads. Tennyson. *Candidates may take up any two authors of the above.*
ROMAN HISTORY: LATIN. Professor Browne Mr. Sandford	To end of Punic Wars, or from that date to the death of Augustus Cæsar. Dawson Turner's Outlines of Roman History (*Parker*). Cæsar: First book. Sallust: Jugurthine War.
FRENCH. Professor Brasseur	Grandeur et Décadence des Romains, par Montesquieu, jusqu'à la fin du Chap. II. La Henriade, jusqu'à la fin du Chant II.
GERMAN. Dr. Bernays	Treue bis in den Tod, by G Nieritz. Schiller's Jungfrau von Orleans.
FREE HAND DRAWING IN *OUTLINE* FROM OBJECTS. *Mr. John Bell*, Mr. F. S. Cary	